

University of Reading

School of Systems Engineering

Information Communication Technologies and Distance Education in Sri Lanka

A case study of two universities

Tharindu Rekha Liyanagunawardena

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Declaration of Original Authorship

Declaration:

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Abstract

Sri Lanka's participation rates in higher education are low and have risen only slightly in the last few decades; the number of places for higher education in the state university system only caters for around 3% of the university entrant age cohort. The literature reveals that the highly competitive global knowledge economy increasingly favours workers with high levels of education who are also lifelong learners. This lack of access to higher education for a sizable proportion of the labour force is identified as a severe impediment to Sri Lanka's competitiveness in the global knowledge economy.

The literature also suggests that Information and Communication Technologies are increasingly relied upon in many contexts in order to deliver flexible learning, to cater especially for the needs of lifelong learners in today's higher educational landscape. The government of Sri Lanka invested heavily in ICTs for distance education during the period 2003-2009 in a bid to increase access to higher education; but there has been little research into the impact of this.

To address this lack, this study investigated the impact of ICTs on distance education in Sri Lanka with respect to increasing access to higher education. In order to achieve this aim, the research focused on Sri Lanka's effort from three perspectives: policy perspective, implementation perspective and user perspective. A multiple case study research using an ethnographic approach was conducted to observe Orange Valley University's and Yellow Fields University's (pseudonymous) implementation of distance education programmes using questionnaires, qualitative interviewing and document analysis. In total, data for the analysis was collected from 129 questionnaires, 33 individual interviews and 2 group interviews.

The research revealed that ICTs have indeed increased opportunities for higher education; but mainly for people of affluent families from the Western Province. Issues identified were categorized under the themes: quality assurance, location, language, digital literacies and access to resources. Recommendations were offered to tackle the identified issues in accordance with the study findings. The study also revealed the strong presence of a multifaceted digital divide in the country. In conclusion, this research has shown that

although ICT-enabled distance education has the potential to increase access to higher education the present implementation of the system in Sri Lanka has been less than successful.

Dedication

To my parents who always unconditionally supported me and believed in me

&

To the University of Reading for the generous studentship I have received

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Index of Abbreviations and Acronyms

A/L	Advanced Level
ADB	Asian Development Bank
ADSL	Asymmetric Digital Subscriber Line
AIDS	Acquired Immune Deficiency Syndrome
APIIT	Asia Pacific Institute of Information Technology
AVU	African Virtual University
BBC	British Broadcasting Corporation
BIT	Bachelor of Information Technology
CD	Compact Disc
CEMCA	Commonwealth Educational Media Centre for Asia
CDL	Centre for Distance Learning
CMC	Computer Mediated Communication
CRT	Cathode Ray Tube
DE	Distance Education
DEMP	Distance Education Modernization Project
DEPP	Distance Education Partnership Programme
DFID	Department for International Development
DLC	Distance Learning Centre
DNA	Deoxyribonucleic acid
ED	External Degree
eLearning	Electronic Learning
EPZ	Export Processing Zones
EU	European Union
FDI	Foreign Direct Investment
GATS	General Agreement on Trade in Services
GCE	General Certificate in Education
GDP	Gross Domestic Product
GPRS	General Packet Radio Switching
HE	Higher Education
IB	International Baccalaureate
ICTA	Information and Communication Technology Agency
ICTs	Information and Communication Technologies
IIT	Informatics Institute of Technology
IMF	International Monetary Fund
INGO	International Non Governmental Organizations
IP	Internet Protocol
IRQUE	Improving Relevance and Quality of Undergraduate Education
IT	Information Technology

JISC	Joint Information Systems Committee
KE	Knowledge Economy
LMS	Learning Management System
LTTE	Liberation Tigers of Tamil Eelam
MDG	Millennium Development Goal
MIT	Massachusetts Institute of Technology
mLearning	Mobile Learning
MoE	Ministry of Education
MoHE	Ministry of Higher Education
NAC	NODES Access Centre
NATO	North Atlantic Treaty Organization
NDEN	National Distance Education Network
NEC	National Education Commission
NGO	Non Governmental Organizations
NIBM	National Institute of Business Management
NIE	National Institute of Education
NODES	National Online Distance Education Service
OASPS	Open Access Scholarly Publishers Association
ODL	Open and Distance Learning
OUSL	Open University of Sri Lanka
OUSL-CE	Open University of Sri Lanka Capacity Enhancement
OUUK	Open University in the United Kingdom
OVU	Orange Valley University
PC	Personal Computer
PPP	Public Private Partnership
PRSP	Poverty Reduction Strategy Plan
SAP	Structural Adjustment Policies
SLASSCOM	Sri Lanka Association of Software and Services Companies
SLIDE	Sri Lanka Institute of Distance Education
SLIIT	Sri Lanka Institute of Information Technology
SMS	Short Messaging Service (texting)
TRIPS	Trade Related Aspects of Intellectual Property Rights
UCSC	University of Colombo School of Computing
UE	University Education
UGC	University Grants Commission
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UoM	University of Moratuwa
UPS	Uninterrupted Power Supply

US	United States
VR	Virtual Reality
VSAT	Very Small Aperture Terminal
WB	World Bank
WTO	World Trade Organization
WWW	World Wide Web
YFU	Yellow Fields University

Glossary of Terms

Batch	Used as a synonym for a cohort of students in Sri Lankan context
Conventional University System	This refers to the full-time, internal (on-campus) and in-person undergraduate programmes
Dropout rate	Percentage of students leaving a course before completion
Estate Sector	All plantations which are 20 acres or more, and have 10 or more labourers
External Degree	A degree studied in distance mode
External Education	A synonym for distance education used in Sri Lankan context
ICT-enabled programmes	Educational programmes that utilize ICTs to deliver course content. For example, programmes delivered online, programmes that use LMS or provide content in a CD
ICTs	Information and communications technologies are the technologies used to create, manage, communicate and distribute information. Examples are: radio, telephone, television, computers and the Internet
Increase access to higher education	Increasing the number of places for higher education
IT Literacy	A combination of intellectual capabilities, knowledge and skills required to use information technology for a meaningful task
Moodle™	An Open Source learning management software used by many state universities in Sri Lanka
Outstations	Areas other than the main cities and their conurbations (can include estates)
Programme (of study)	A collection of modules or strands. Programme and course are used interchangeably.
Rural Sector	Areas that are not categorized as urban or estate
Tutories	Institutions providing tuition for students
Urban Sector	All areas administered by Municipal and Urban councils
Widen access to higher education	Increasing the number of students from underrepresented groups (such as rural, poor, disabled) in higher education

1 Introduction

This chapter provides a brief background to the research problem and introduces the research question. The researcher's interest in the project and the thesis outline is also presented.

1.1 Background to the Research

It has been widely argued that the knowledge economy (KE) favours highly skilled and adaptable workers, typically those with a higher education (HE) (Rassool 1999; Castells 2000a; Brown, Green et al. 2001). Thus there is an increasing demand for quality HE all around the world, not only from school leavers but also from workers who are expected to be engaged with the process of lifelong learning. Information and Communication Technologies (ICTs) have the potential to extend educational opportunities through eLearning and the flexibility offered by this method of delivery is appealing to people who are not able to attend full-time university-based courses.

Sri Lanka is often cited as a statistical outlier in the South Asian region for its remarkable record on literacy rates, and the achievement of universal primary education (Jayaweera and Gunawardena 2007; Riboud, Savchenko et al. 2007). However, statistics show that there is disproportionately low access to HE in Sri Lanka. For example, in 2000 when 53% of Indians were illiterate 5.7% had above secondary level education (Riboud, Savchenko et al. 2007); on the other hand, in Sri Lanka where only around 9% were illiterate, just 3% of adults over 30 years (excluding the Northern and Eastern Provinces) had attained above secondary level education (Department of Census and Statistics Sri Lanka 2011c).

The government of Sri Lanka attempted to address this issue by investing in distance education (DE) using ICTs for delivery. The government of Sri Lanka, with the assistance of the Asian Development Bank (ADB), has invested heavily in online technologies for DE. Despite this investment, little research has been devoted to understanding the impact of ICTs on DE programmes, particularly with respect to the goal of increasing access.

This exploratory research study seeks to understand the impact that the introduction of ICTs to undergraduate DE programmes in state universities has had on access to HE in Sri Lanka.

1.2 Research Question

What impact has the introduction of ICTs to undergraduate DE programmes in Sri Lankan state universities had on facilitating access to HE?

In relation to the research question, this research aims to address the following sub-questions:

1. How have ICTs been introduced to undergraduate DE programmes in contemporary Sri Lanka?
2. How are these initiatives perceived and experienced by the students on DE undergraduate degree programmes?
3. How have ICT based DE programmes influenced 'access' to HE?
4. What are the strengths and constraints of the DE system implemented?

In order to answer the above questions the research project focuses on the following specific questions.

1. How have ICTs been introduced to undergraduate DE programmes in contemporary Sri Lanka?
 - a. What is the government rationale for introducing ICTs to undergraduate DE programmes and which initiatives have been introduced?
 - b. How have these been implemented by the state universities providing DE undergraduate degree programmes?
2. How are these initiatives perceived and experienced by the students on DE undergraduate degree programmes?
 - c. What ideas and beliefs do students have about the introduction of ICTs to undergraduate DE degree programmes?
 - d. How do they utilize ICTs to engage in their learning programmes?
3. How have ICT based DE programmes influenced 'access' to HE?
 - e. Why have students enrolled on these programmes?
 - f. How well are they prepared for these programmes regarding skills, motivation and resources?

- g. What are the characteristics of students who have gained ‘access’ to HE through these initiatives?
- 4. What are the strengths and constraints of the DE system implemented?
 - h. What are the difficulties faced by students in participating in these programmes?

1.3 Research Interest

The researcher was one of the six students in her Advanced Level class (out of 45+ students) who gained access to state university HE. While it was a triumph for those who secured state university places (and for the school for which it was a record achievement), it was the end of their dream of HE for the majority, as there were not many affordable private HE providers in the island in 1997. This inequality of access to HE struck the researcher as she accepted her classmates’ tearful good wishes, and sparked interest in access to HE in Sri Lanka.

Being part of the 3% of privileged students of the school leaving age cohort to enter state funded HE in the state university system, this study is partial repayment of the researcher’s personal debt to Sri Lanka for the free education she received.

1.4 Thesis Outline

Chapter 1 – Introduction

Chapter 1 introduces the research question and aims of the research. It also describes the researcher’s interest in the problem. Finally, it presents an overview of the thesis.

Chapter 2 – Background

This chapter contextualizes the study by describing Sri Lanka’s geography and people in brief and discussing its education and HE system, with emphasis on DE provision in HE.

Chapter 3 – Globalization and Knowledge Economy

Chapter 3 examines the global changes that have shaped today’s knowledge economy, emphasising the transformation of work. It argues that there is an increasing need for HE in order to succeed in today’s labour market.

Chapter 4 – Distance Education and Technology-Mediated Education

This chapter advances the argument made earlier in Chapter 3 by arguing that technology-mediated DE is a good method to meet today's higher educational needs. It also argues that appropriate technology selection is vital for the success of such systems.

Chapter 5 – The Digital Divide

Chapter 5 argues that communities deprived of digital technologies and digital literacies are further marginalized in today's KE as they are unable to harness the potential of technology-mediated education and other services.

Chapter 6 – Methodology and Research Design

The 'Methodology and Research Design' chapter establishes the researcher's position in relation to the knowledge claims of the thesis and discusses the research design used to investigate the research question. It also discusses methods of data collection, the field work and achieving quality in research.

Chapter 7 – Data Presentation, Analysis and Discussion – Preamble to Case Studies

Chapter 7 is the first of four chapters dedicated to data presentation, analysis and discussion. It provides a preamble to the case studies presented in the later chapters discussing the Sri Lankan government's initiatives and expectations of ICT-enabled DE programmes. When presenting quotations from student participants, their name (fictitious), age, gender (M – male or F – female) and their residence (separated by hyphens) is given in the following format: *Name-AgeY-M/F-Location*. For example, a quote from a 24-year-old female student, Anne from Colombo, is presented as Anne-24Y-F-Colombo while a quote from a 24-year-old male student, Dick from Colombo, is presented as Dick-24Y-M-Colombo.

Chapter 8 – Data Presentation, Analysis and Discussion – Case 1 – Orange Valley University

The Orange Valley University (OVU) case study is presented in this chapter by analyzing and discussing both qualitative and quantitative data collected in the research.

Chapter 9 – Data Presentation, Analysis and Discussion – Case 2 – Yellow Fields University

This chapter presents a second case study, the Yellow Fields University (YFU) case study. It analyzes and discusses both qualitative and quantitative data collected in the research.

Chapter 10 – Data Presentation, Analysis and Discussion – The Comparison of Case Studies

This chapter presents a comparative analysis of the OVU and YFU case studies.

Chapter 11 – Key Findings

Chapter 11 draws attention to the key findings of the research and examines them under five themes: quality assurance, location, access to resources, digital literacy, and language, also linking them to the literature.

Chapter 12 – Conclusions and Recommendations

This final chapter presents the conclusions of the study, makes recommendations and discusses the contributions of the study to knowledge within the field. It also includes the reflections of the researcher on the research process, as well as the limitations of the research and finally identifies areas for further research.

2 Background

2.1 Sri Lanka in Brief

2.1.1 Geography and Population

The Democratic Socialist Republic of Sri Lanka, previously known as Serendib or Ceylon, is an island in the Indian Ocean to the South East of India (Appendix - A), with an area of about 65600 square kilo-meters (almost the size of the Republic of Ireland) and a population of around 20 million. Sri Lanka's average temperature ranges from 26°C – 28°C and two monsoons influence its rain fall. The majority of the population is Sinhalese (81.9%), while the minority comprises Tamils, Muslims and others according to the 2001 census. Most Sinhalese are Buddhists (76.7%) while the majority of Tamils are Hindus (Department of Census and Statistics Sri Lanka 2009b). Sinhala and Tamil are the official languages; English too is widely used and is also a compulsory subject on the school curriculum. Only 14.57% of the population lives in the urban sector (areas administered by municipal and urban councils), 5.4% in the estate sector (plantations which are 20 acres or more and have 10 or more labourers), and others in the rural sector (Department of Census and Statistics Sri Lanka 2001b).

2.1.2 Governance

Colombo is the commercial capital of the country while Sri Jayewardenepura Kotte is the administrative capital. The island is administratively divided into 9 provinces and 25 districts (Appendix - B). Sri Lanka had been in an internal armed conflict with the Liberation Tigers of Tamil Eelam (LTTE) for nearly three decades since the late 1970s; in 2009 the government regained control of areas in the Northern and Eastern Provinces, previously held by the LTTE.

Elected for a six-year term, the executive president of Sri Lanka is the head of the state as well as the head of the government. The parliament consists of 225 members from various political parties, elected for six-year terms. Although local governments in the form of Municipal Councils, Urban Councils and “Pradeshiya-Sabhas” (for rural and village areas), and Provincial Councils with five-year terms and limited responsibilities exist, the central

government controls the political system (Asian Development Bank 2004). Ministries exist at two levels: the central government provides services nationally whilst the provincial council level provides services for the province. This structure, however, is complicated with public services being managed under two sets of ministries; for example, National Schools are governed by the central government's Ministry of Education (MoE) while all other schools are governed by the provincial council's respective ministry.

2.1.3 Economy

Sri Lanka's economy was traditionally based on agriculture, mainly on plantations such as tea, rubber and coconut. However, today the service sector is the largest contributor to the Gross Domestic Product (GDP) while garments and textile exports are the largest contributors to the export income. Remittances from Sri Lankans working abroad, especially in the Middle East, are the largest foreign exchange earner for the country; but in recent years the software industry has also shown promising prospects as a foreign exchange earner.

2.1.4 Standards of Living

Sri Lanka is categorized as a country with medium human development (UNDP 2010); the country ranks 12th in the world in terms of gender equality (Hausmann, Tyson et al. 2008) with a healthy adult literacy rate of 91.1% (Department of Census and Statistics Sri Lanka 2001a). This is largely due to the "Free Education" and "Free Health Care" policies adopted and maintained by successive governments after independence from Britain in 1948. However, 'computer literacy' (the Sri Lankan definition of computer literacy will be discussed in Chapter 5) among Sri Lankans is still low, only 20.3% among the 5-69 year age group; computer ownership is also low at only 11.4% (Department of Census and Statistics Sri Lanka 2009a).

Poverty is a major issue in Sri Lanka (especially in rural areas), where 15.2% of the population lives below the "Official Poverty Line for Sri Lanka", which is Rs.2,233 (about US\$ 20 or £13) per person per month (Department of Census and Statistics Sri Lanka 2008b). Many Sri Lankans aspire to higher education (HE) as the gateway to opportunities for helping them to escape from poverty. However, the number of available places in the state university system for HE is very limited. For example, in 2008, although 61.7% of the

students who took the General Certificate of Education (GCE) Advanced Level (A/L) examination were academically eligible for university admission, only 16.01% of those (less than 3% of the age cohort) were admitted to the state university system (Loxley, Ho et al. 2003; University Grants Commission Sri Lanka 2010). In this context, the Sri Lankan government is exploring avenues to increase opportunities for university education (UE).

2.2 Education System

Sri Lanka has experienced a significant increase in its literacy rate during the past six decades, from only 69% literate in 1953 to 91% literate in 2001 (Department of Census and Statistics Sri Lanka 2010b). The National Education Commission (NEC) is the institute that sets the national aims and objectives of education and formulates national education policy. The central government's Ministry of Higher Education (MoHE) oversees the HE system of the island while the rest of the education system is organized under the MoE. However, provincial educational matters are delegated to the provincial councils, which also have their own ministries for education.

Four major stages in the Sri Lankan education system are:

1. Early childhood education (3 to 5 years)
2. Formal schooling
 - a. Primary (Grades 1 to 5)
 - b. Junior secondary (Grades 6 to 9)
 - c. Senior secondary (Grades 10 to 13)
3. Vocational and technical education
4. Tertiary education

Presently the government of Sri Lanka does not fund or regulate early childhood education but it has been identified as an area requiring urgent attention. Formal schooling is well organized in the Sri Lankan education system, but due to the stark contrast between National Schools directly managed by the central government's MoE, and other schools managed by the provincial councils, with regard to facilities, quality of education and social recognition, there is heavy competition for National School admissions for Grade 1. Selection for Grade-1 entrance is based on a complex formula that gives priority to residents within close proximity to the school, but also allocates provision for some other categories: for example,

children of public servants, workers from overseas, armed forces personnel, and past pupils. In 2002 Sri Lanka achieved primary enrolment ratios of 97.1% and 95.6% respectively for boys and girls (National Council for Economic Development n.d.). At Grade 11 students take GCE Ordinary Level (O/L) examination (equivalent to the UK's GCSE) and at Grade 13 they take GCE A/L examination (equivalent to the UK's A-levels), which, as is the case in the UK, are also used for university entrance evaluations.

There are two points of entry for vocational education: after the completion of basic education at Grade 9 or after the completion of GCE O/L. Tertiary education entry is open to those with GCE A/L qualification and graduates from technical colleges. The system of education in Sri Lanka is summarized in Figure 2-1 (adapted from the World Bank 2005).

In funding the education system, the government of Sri Lanka stretches its limits to the maximum. Not only are there no enrolment fees or tuition fees, but text books and uniforms required for school education are also provided free of charge. School education is funded from general taxation and every child's education from grade one to grade thirteen is fully funded by the government.

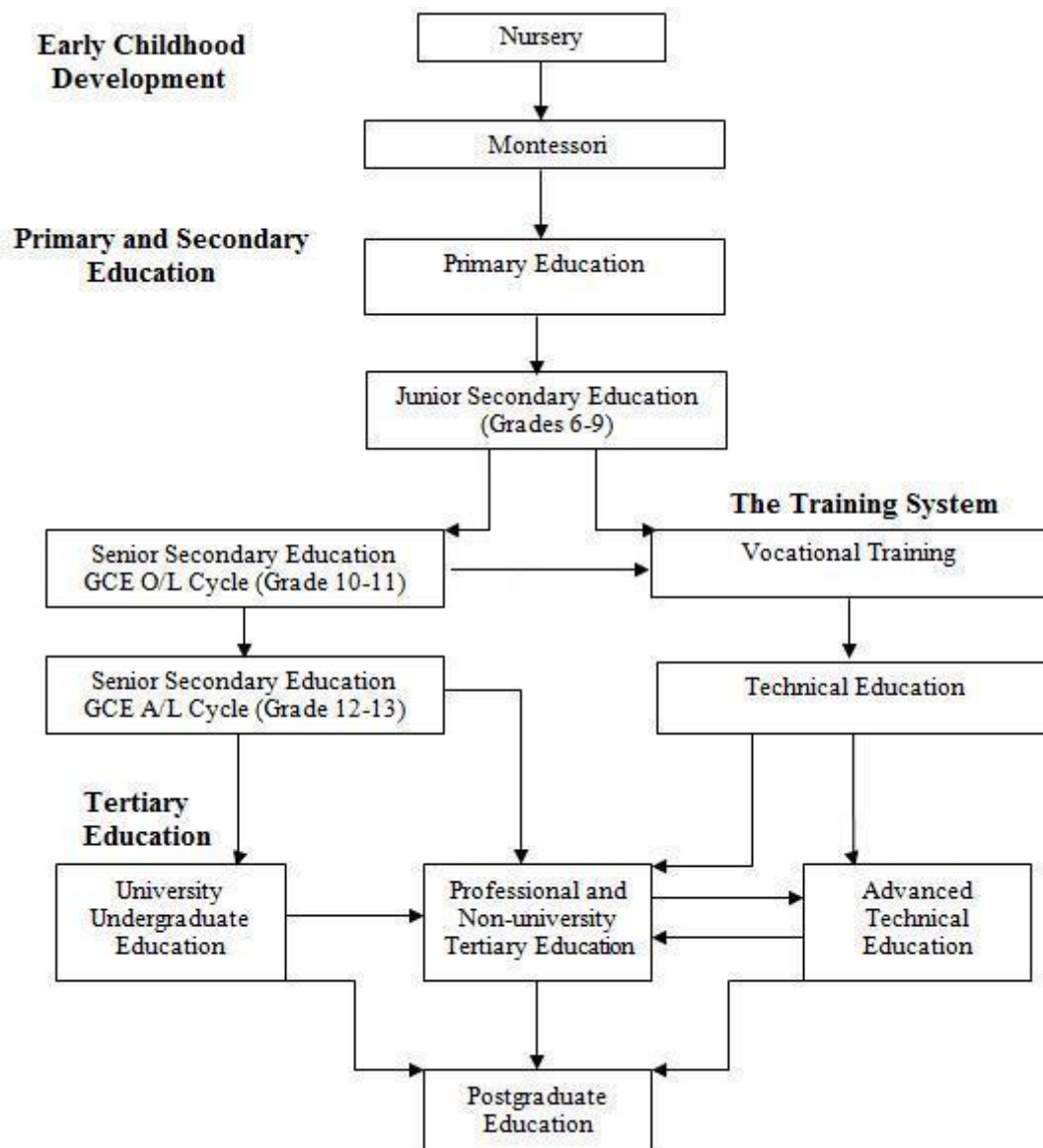


Figure 2-1: Organizational Structure of the Sri Lankan Education and Training System

2.3 Higher Education System

The HE system in Sri Lanka offers several options for secondary school graduates. UE is organized under the University Grants Commission (UGC) and mainly consists of two types of universities, state universities and private universities/institutes. All state universities apart from the Open University of Sri Lanka (OUSL) are fully state-funded. The OUSL is partially (around two thirds of its costs) state-funded; it charges a fee to students to cover the remaining expenses. Most private universities are for-profit institutions offering either an affiliated foreign university degree, UGC approved degree, or even degrees that are not approved by the UGC. “Piriven” is another education and HE provider that is also state-funded; this is the traditional education system for Buddhist monks, which has been in existence since the time of Siddhartha, since about 2560 years ago. The Piriven Act of 1979 formalized this education system in Sri Lanka, and appointed the Piriven Branch of the MoE as the administrative authority (Kulatunga 2008). The Sri Lanka Law College offers formal legal education for those wishing to become lawyers. There are also other Professional Colleges, Non-University Tertiary Education Institutes and Advanced Technical Education Institutes providing HE opportunities (Nanayakkara and Wijesuriya 2007).

2.3.1 State University Education

There are 18 state-owned universities, which provide HE for nearly 22,000 students per year. Until recently the state owned universities were all located in proximity to densely populated urban areas (Appendix - C). For example, 6 out of the 18 state universities are located in the district of Colombo, which partially explains the uneven distribution of HE facilities on the island. In the mid 1990s the government initiated the establishment of new HE institutes in rural areas such as Oluwil and Rajarata. The UGC governs 15 of the 18 state universities. The other three state universities are governed by the MoE. Of these three universities, Kotalawala Defence University provides HE for armed forces personnel while the other two universities provide HE mainly for the Buddhist clergy.

State universities offer opportunities for postgraduate education that are full fee-levying programmes; the discussion here concentrates on state university undergraduate degrees. Entrance to state universities is governed by the UGC (apart from the OUSL) and is restricted to students gaining minimum entry qualifications (at least simple passes in all three

approved subjects with a minimum aggregate of 150/300 and a minimum mark of 30% for the Common General Paper) at the GCE A/L examination (only 3 attempts at the GCE A/L are allowed for state university entrance). State universities offer undergraduate degree programmes:

- Internal (on-campus) full-time
- External (distance learning) full-time or part-time

State university internal education is fully state-funded and the number of available places for these is limited. As a result there is a high rate of competition to gain access to this limited number of places. On the other hand, external degree programmes are self-funded, distance education (DE) programmes that recruit much larger numbers.

The state school education system in Sri Lanka is conducted in official languages (Sinhala and Tamil) and allows a pupil to study the school curriculum in their mother tongue (Sinhala or Tamil). Recently English as a medium of education was also introduced in some schools. Education at university for many disciplines including medicine, engineering, veterinary science and dentistry are conducted only in the English language.

2.3.1.1 State University – Internal Education

Students who are eligible to apply for state UE do so via the UGC, which is responsible for the selection of students for the state universities under its control. The UGC utilizes the “Z-score” technique to rank applicants in their disciplines. Z-score is a statistical method to standardize the marks of different subjects so that they can be compared (Kulatunga 2008). The minimum Z-score for entrance to a particular course at a state university is calculated by the UGC, by considering the number of places available in the state university system. The policy for state university admissions considers the number of students entering university under a merit scheme (up to 40% of the available places are filled in the order of Z-scores ranked on an all-island basis), administrative district quotas (up to 55% of the available places are allocated based on the ratio of population of the district to the population of the country), and special quotas for under-developed districts due to the lack of educational facilities in those districts (National Education Commission 2009). Very few places are allocated under “special provision” for special needs students; students who have excelled in sports, art and culture; students with foreign qualifications; and personnel enlisted in the armed forces or police (Kulatunga 2008). These selection criteria are being revised as they

are regarded as being unfair on students who have studied in districts considered to be “developed” (National Education Commission 2009). Some degree programmes conducted by state universities, for example the Bachelor of Architecture programme at the University of Moratuwa (UoM), select their candidates by considering GCE A/L marks along with an aptitude test. Apart from these few special courses, there is no means of entering the state university system other than by obtaining the Z-score specified by the UGC in the highly competitive GCE A/L examination.

State university internal education is free from enrolment fees or tuition fees and university hostel accommodation is heavily subsidised. Students with the top all-island ranks in each discipline are awarded “Mahapola” merit scholarships; needy students can apply for “Mahapola” scholarships, university bursaries or endowed scholarships, all of which are financed by the government. Some private organizations also provide scholarships for selected students. Thus, many students entering state university internal education receive financial assistance; for example, 52,953 students received government sponsored scholarships and bursaries in 2009 (University Grants Commission Sri Lanka 2009) while others mostly depend on parental support. (Note: according to the UGC, 68,768 students were enrolled in undergraduate programmes in 2009; thus 77% of the students received some form of financial assistance from the government).

2.3.1.2 State University – Distance Education

The OUSL degrees and external degrees (ED) are the two types of DE offered by state universities. Assuming DE to have a per capita student cost significantly less than that of campus-based universities (as many do), the Sri Lankan government has turned to the option of DE in order to expand HE in Sri Lanka. Under certain conditions, open and distance learning (ODL) systems have delivered quality education to large numbers at a unit cost lower than that of conventional education systems (Bates 2005). By analysing the unit cost (considering both direct and indirect costs) of various degree programmes offered by 44 faculties in Sri Lankan state universities, and comparing them across universities, Chandrasiri (2003) concluded that the OUSL produced both arts and science graduates at the lowest cost. Further, Loxley, Ho et al. (2003) state that on average the unit cost of the OUSL is only 20% of the conventional university system. Therefore one might be able to justify the

Sri Lankan government's decision to expand the HE system using DE, which is discussed later in the chapter.

2.3.2 Non-State University Education

Currently state universities are the largest providers of UE in Sri Lanka; however, private institutes too are actively involved in UE. The government of Sri Lanka has allowed the private sector to participate in HE provision only since the 1990s.

In providing HE programmes in Sri Lanka, some foreign universities have become affiliated to Sri Lankan institutions. For example, the Sri Lanka Institute of Information Technology offers degrees in partnership with foreign universities such as Sheffield Hallam University and Curtin University of Technology (Sri Lanka Institute of Information Technology 2012), while the Informatics Institute of Technology offers University of Westminster degrees. The inclusion of education as a tradable service under the General Agreement of Trade in Services (GATS) and the increasing demand for HE in the global knowledge economy (KE) are both factors which have increased private and foreign participation globally, especially in HE (further discussed in Chapter 3). Sri Lanka's need to increase HE opportunities to meet its vision for the year 2020 (Ministry of Finance and Planning 2010) has encouraged these types of connections. For example, the University of Salford is planning to offer a full degree programme in Sri Lanka to train quantity surveyors (Times Higher Education 2011). However, the high fees in these institutions prevent many students from pursuing a degree.

Due to limited capacity in the state university system, every year many students, 84% of eligible students and nearly 98% of the relevant age cohort (Kaye 2002), fail to gain a place. Students who are able to afford foreign HE leave the country and this has become a major currency outflow for the country. Vision 2020 for Sri Lanka (which is associated with the UN Millennium Development Goals set for the country) states that

the system [higher education system] still needs to make significant attempts to ensure access and full participation, raise achievement levels and reduce regional disparities (Ministry of Finance and Planning 2010, p113).

Its target is to double the number of students entering local universities by 2020 and to become “the most preferred country for higher education in the Asian subcontinent” (Ministry of Finance and Planning 2010, p120).

2.4 Distance Education

Distance education in Sri Lanka has primarily been serving the HE sector and teacher training since the 1930s and is called ‘external education’ or ‘external studies’. This discussion uses the terms external education and DE interchangeably. In the 1970s there were three institutes providing DE in Sri Lanka: the MoE’s DE Unit; University of Sri Lanka - External Service Agency; and the Sri Lanka Institute of Distance Education (SLIDE) (Coomaraswamy and Abeywardena 2007).

2.4.1 The Open University of Sri Lanka

In 1980, the OUSL was established incorporating the External Service Agency of the University of Sri Lanka and the SLIDE. The MoE’s unit for DE (providing teacher training for graduates) worked in collaboration with the OUSL until 1985. Then the OUSL assumed the duty of training graduate teachers at a distance from 1985 (Karunanayaka and Wijeratne 2005). The OUSL is dedicated to ODL with the same legal and academic status as any other Sri Lankan university. Unlike the other state universities, the OUSL is permitted to charge student fees. Its fee structure is less expensive or ‘pro-poor’ (Jamtsho, Rinchen et al. 2010a) than most of the other HE institutes present on the island and provides educational opportunities for more than 25,000 students (Samaranayake and Wimalaratne 2007). The OUSL’s main campus is located in Nawala – Colombo, but it provides educational opportunities for students living in all parts of the island through its network of regional centres (where activities such as registration of students, lectures and practical sessions are conducted by senior lecturers), and study centres (limited activities co-ordinated by one officer such as English classes - no senior lecturers involved). It offers a wide variety of courses ranging from certificates to higher degrees in various disciplines. This allows the OUSL to cater for the diverse needs of a larger segment of the population: academics, professionals, employers, students and society at large. OUSL courses are modular and teaching methods include the use of printed materials, face-to-face sessions (‘day-schools’ or tutorials, lab sessions, workshops and seminars), audio and video recorded materials, email and online communications between students and lecturers, and a virtual classroom experience.

DE in Sri Lanka has greatly contributed to the area of teacher training and development. The MoE through the National Institute of Education (NIE) provides a teacher training programme for non-graduate teachers of Science and Mathematics, using DE. Both the NIE and the OUSL conduct training programmes for graduate teachers. The distance mode of study is becoming popular with professionals (such as general practitioners, lawyers, and dentists) with the new online programmes introduced by the OUSL.

The government has identified a need to enhance DE on the island as a means of providing a UE to the nearly 84% of eligible students who are unable to access existing state university provision. The national policy framework for HE and technical and vocational education puts forward a strong argument for the need for new methodologies of educational delivery such as DE for the optimization of HE opportunities for all who aspire to it (National Education Commission 2009). Therefore, state universities have been allowed to provide DE opportunities for undergraduates, especially in the area of IT, which is a discipline experiencing a high level of demand at present.

2.4.2 External Degree Programmes

State universities have been conducting external degree (ED) programmes for many years and in 2001 there were more than 166,000 students registered in these programmes (Kaye 2002). The UGC definition of an ED programme through ODL is as follows:

Open and Distance Learning refers to providing learning opportunities in an environment where there is a separation of teacher in time and/or place and learning is achieved through the use of a variety of media, including print and electronic media which requires specialized division of labour in the production and delivery of courses. Throughout the learning period, two-way communication is maintained allowing learners and tutors to interact with one another in occasional face-to-face meetings. Finally, the learning process and outcome are certified by means of evaluation by a specified institution or agency (Samaranayake 2010, p2).

The Bachelor of Arts degree programme has been the most popular ED programme, but the newly introduced Bachelor of Business Administration and Bachelor of Information Technology (BIT) degree programmes are gaining popularity (Kaye 2002).

These ED programmes, in most cases provide very little guidance and support for students. Most universities merely register external students and conduct ED examinations, resulting in very high failure rates. Students registered on ED programmes depend on private institutions

for teaching support, but as these institutions are not regulated their standards are questionable. The academic standards of EDs have been a concern for years, but little has been done to improve the situation, resulting in many unemployed ED graduates (Kaye 2002). Consequently the general public in Sri Lanka commonly associates an ED graduate with unemployment.

A UGC policy circular in October 2010 (Samaranayake 2010) outlined a new policy framework and directives to rectify this long-standing issue. It also ordered all universities and other HE institutes to discontinue new ED intakes until adherence to the directives was guaranteed. This new policy limits the number of students that can be admitted to an ED programme to two times the internal intake for the same programme. This limit on admission reduces the number of students being admitted to UE, possibly contradicting the government's policy of increasing and widening access to UE (National Education Commission 2009). However, if it leads to improvements in graduation rates it could lead to a higher number of graduates as opposed to entrants, the latter being a higher number currently. It might also reduce the number of unemployed ED graduates. The circular mandates the degree certificate to indicate that the degree was obtained by external study. This circular, together with the government vision for 2020 (Ministry of Finance and Planning 2010) and the strategies adopted in the national Poverty Reduction Strategy Plan (PRSP) required by the World Bank of borrowing countries, highlights the importance of quality assurance and providing learner support. Hence it is hoped that these directives will overcome the shortcomings of the current ED system.

It is hoped that the task of providing learner support in ED programmes can be accomplished with the use of ICTs. For example, the University of Colombo School of Computing (UCSC) introduced a BIT programme in distance mode, which provides eLearning support through its online Learning Management System (LMS), a weekly TV programme (broadcast by TV Lanka), and a web portal to access study materials and CD-based content (University of Colombo School of Computing 2006). UoM, the pioneer in engineering education in Sri Lanka introduced a BIT ED programme in 2007, which provides the option to study the programme fully online.

The government of Sri Lanka has been laying the foundation for the use of educational technology to increase and widen access to UE through many projects. In 2001 the World Bank funded the establishment of a Distance Learning Centre (DLC) in Colombo, with state-of-art video conferencing and multimedia lab facilities. Today the DLC provides global

knowledge sharing and learning opportunities through the Global Development Learning Network (World Bank 2003a).

2.5 Conclusion

Sri Lanka, although a developing country, has a medium level of human development and has achieved nearly universal primary education. There is an acute shortage of affordable university education opportunities in Sri Lanka thus creating fierce competition for places in the state university system. Due to its poor quality the current system of external or distance education has failed to fulfil this unmet need. The government is seeking avenues to increase and widen access to quality university education and technology-mediated distance education is looked upon favourably.

3 Globalization and the Knowledge Economy

3.1 Introduction

This chapter focuses on the contemporary processes of globalization in relation to the rise of the ‘knowledge society’, and situates Sri Lanka’s policy initiatives within the broader context, orienting itself towards meeting the labour market needs of the knowledge economy (KE). It discusses contemporary perspectives on globalization and relates this discussion to the issue of inequality. This is followed by a discussion of globalization and the transformation of work in the ‘Network Society’. The role of higher education (HE) within the context of the KE is considered and linked with HE policy development in Sri Lanka.

3.2 Contemporary Globalization

The advancement of technologies, especially Information and Communication Technologies (ICTs) has facilitated globalization with McLuhan predicting a ‘Global Village’ back in the 1960s (McLuhan 2001). However, the concept of time-space compression is found even earlier in Marx’s writing.

[W]hile capital must on one side strive to tear down every [...] barrier [...] to exchange and conquer the whole earth for its market, it strives on the other side to annihilate this space with time, i.e. to reduce to a minimum the time spend in motion from one place to another (Marx 1973, p539).

Advanced ICTs (including media) bring distant parties together, reducing the time lag via improved international communication by providing a virtually real-time experience. Although interconnectedness is one important feature of globalization it is not the only defining factor. However, since some still misleadingly view increasing connectedness in this way (that is as the sole defining factor of globalization) (Robertson and White 2007), it is important to analyse current definitions of globalization in order to provide a textured understanding of globalization in the contemporary world.

3.2.1 Defining Globalization

Giddens (1990) defines globalization as:

the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa (Giddens 1990, p64).

He highlights the intensification of global relations and their impact on distant localities.

Another view is that:

globalization can be thought of as *a process (or set of processes) which embodies a transformation in the spatial organization of social relations and transactions – assessed in terms of their extensity, intensity, velocity and impact – generating transcontinental or interregional flows and networks of activity, interaction and the exercise of power* [original emphasis] (Held, McGrew et al. 1999, p16).

Here, Held et al. address four features, which they call ‘spatio-temporal’ dimensions of globalization: extensity (stretching), intensity, velocity, and impact.

Robertson argues that

globalization as a concept refers both to the compression of the world and the intensification of consciousness of the world as a whole (Robertson 1992, p8).

Robertson’s conception of globalization highlights two major tendencies, namely, interconnectedness and consciousness. For example the tsunami which devastated the coastal areas of Asia in 2004 also had a massive impact on distant localities. The video broadcasts over media networks of the death, devastation and most of all, of the grievous plight of the victims struggling for their lives, raised consciousness and a massive collection of humanitarian aid because the impact of the catastrophe was felt globally.

Several features of globalization that are highlighted in the three definitions above are: new formations and the increase of established social networks and actions; strengthening and speeding up of activities and exchanges; growth and widening of social interactions, activities, and interdependence; increasing consciousness of social interdependence and interactions (Steger 2003). Thus, globalization can be defined as a set of complex processes that create, increase, extend, and intensify the interdependence and exchanges of the world as a whole. It also encourages awareness of strong and complicated connections between the local and distant thus impacting on global consciousness.

3.2.2 Schools of Thought

Three broad schools of thought dominate the conceptualization of globalization: *hyperglobalizers*; *the sceptics*; and *the transformationalists* (Held, McGrew et al. 1999; Steger 2003). Hyperglobalizers conceptualize globalization predominantly as an economic logic, where boundaries of nation states are challenged by increasing world trade, global financial markets and transnational corporations. The *hyperglobalizers'* version of globalization leads to economic and political decentralization or 'denationalization', where nation states have very little influence as they have to face more powerful local, regional, and global governance. Hyperglobalizers argue that the previously conceived North-South divide is an 'anachronism' as the new forms of division of labour replace traditional core-periphery hierarchical structures; they advocate the emergence of a 'global civilization' with a global governance (Held, McGrew et al. 1999). The World Bank (WB), the World Trade Organization (WTO), the International Monetary Fund (IMF), and the governments of wealthy countries have emphasised this version of globalization, which has overshadowed other conceptualizations of it.

The *sceptical thesis* of globalization draws on historical and statistical evidence of world trade, investments, and labour, and argues that globalization disguises the reality of the international economy, which is increasingly 'regionalized', with three major regions, namely, Europe, North America and Asia-Pacific. Sceptics rely on perfectly integrated world markets to denote globalization (Steger 2003); as these have not yet been achieved, they reject the notion of globalization as a myth. They hold that nation states remain powerful in regulating international economic activities. The sceptics' conception of globalization recognizes the inequality and hierarchy in the world economy. They argue that the internationalization of the world economy has not accommodated a weakening of the North-South division; rather, it has created increased economic flows within the North, excluding the rest of the world. Thus, sceptics argue that the increasing marginalization of the Third World may inspire fundamentalism and aggressive nationalism, instead of contributing to the 'global civilization' that hyper globalists envisage.

Transformationalists view globalization as the thrust that has caused unprecedented changes in contemporary society. They observe that societies across the globe are adapting to a more interconnected and highly uncertain world as a consequence of globalization. While some

societies are increasingly networked and absorbed into the global order, others are marginalized. Transformationalists acknowledge that this marginalization of core-periphery is no longer a geographical distinction, but a social division nested within the world economy. Furthermore, they argue that globalization has altered the conventional forms of inclusion-exclusion of countries to a hierarchy that has infiltrated all societies and regions in the world (Held, McGrew et al. 1999). Transformationalists view state governments as the ultimate legal power, but with increasing obligations to international law, which in turn, transforms state power.

As discussed so far, the world view of globalization is shaped mainly by these schools of thought. Of these, the hyperglobalists' position represents predominant conceptualizations, as the neoliberal policies advocated by the WB, the IMF and the WTO have had lasting impacts on the world. Thus, two forms of imaginations of globalization 'globalization-from-above' and 'globalization-from-below' have emerged.

3.2.3 Globalization-from-above

Globalization-from-above appropriates resources from locals and the natural environment to support the wealthy and powerful in increasing their position. Hence, it is argued that it reflects and distributes consumer culture led by developed states, transnational corporations, and political elites, and allows powerful states and corporations domination of the rest (Brecher, Childs et al. 1993). Falk (1993, p39) claims that globalization from above:

is the New World Order, whether depicted as a geopolitical project of the US government or as a technological and marketing project of large scale capital, epitomized by Disney theme parks and franchise capitalism (McDonalds, Hilton, Hertz).

Ritzer's (2003; 2004) concept of 'grobalization' is also similar to that of globalization-from-above, which focuses on the spread of the market economy and Americanization throughout the world. As Stiglitz's (2002) analysis demonstrates, this domination of the West has caused widespread discontent, which is perceived as a consequence of globalization. In explaining this further, it is important to view historical events that have led to the market domination of the United States (US). This was due in particular to the relatively little damage experienced by the US industries during the Second World War, as opposed to other major industrial powers (Wallerstein 2000). With the establishment of the UN, the IMF, and

the WB, the US was able to influence the world political order. The IMF operates a quota system of contributions to its funds and therefore the share of power is largely based on the size of economy of a country. The power held by the US in IMF decisions due to its high contributions to the funds is highlighted by Harvey (2003) according to whom “the IMF is the United States” (Harvey 2003, p72). In the aftermath of the Second World War, during the ‘Cold War’ period, a de facto US Zone and Soviet Zone divided the world into two regions, where the then super powers remained militarily within their regions and contributed to the rebuilding of these regions. However, the Third World was largely left out of this rebuilding effort (Wallerstein 2000). The US enjoyed demand from Europe and Japan; but as industries in these regions recovered, the US had to compete for markets and in order to be profitable it needed to expand its reach.

The WTO advocates trade liberalization for its member countries. Due to power inequalities between trading nations, instead of liberalizing trade of all products, it has liberalized trade sectors where the powerful nations have a competitive advantage; thus capturing markets and destroying small businesses in local markets in the developing world. The global media have also helped the distribution of Western consumer culture around the world. The aggressive advertising campaigns of Western brands have infiltrated the consumer markets of the developing world. Increased dependence on imported items and soaring fuel prices in the 1970s forced many developing countries to seek assistance from the IMF. These loans obtained at preferential interest rates were accompanied by the Structural Adjustment Policies (SAP) with a set of conditions stipulated by the IMF that were dictated largely by the US government and other leading countries in the West, which eroded the nation state’s supremacy in controlling its own territorial governance. Along with mis-governance (e.g. corruption, wrong choices) and protracted civil wars/conflicts, the SAPs caused deterioration in the living conditions of the poor (further discussion presented in section 3.3 *Globalization and Inequality*). In this sense, Brecher, Costello et.al (2000) argue that globalization-from-above has reversed the postcolonialism movement that led to the economic independence of the Third World countries, heading back to an era where the former imperialist powers have regained dominance over these countries within the global economy.

Globalization-from-above tends to homogenize the world by dispersing Western popular culture and consumer culture around the world. For example, teenagers around the world eat

from McDonalds, drink Coca-Cola, and wear Nike clothes; teenagers of the Third World flock to second-hand shops and counterfeit producers in search of ‘designer’ items.

3.2.3.1 Glocalization

Robertson (1992), on the other hand, observes the heterogeneity of globalization and proposes a different view of globalization. Robertson argues that:

we need to develop images of the global *whole* which allow for the continuation of the pattern of globalization under greatly changed conditions. We also need, *inter alia*, to see where individuals and constructions of the individual as well as human kind, fit into the picture [original emphasis] (Robertson 1992, p5).

Robertson presents the idea of ‘glocalization’, which is the blending of the global with the local to create a unique outcome (Robertson 1995). The fast food giant McDonalds’ adjustment to the Sri Lankan setting (where rice is the staple food) by introducing McRice is an example of glocalization. The concept of glocalization encompasses a ‘postmodern’ view of the process of globalization and its cultural dimension. The postmodern view here refers to the multiplicity of views and expressions, which includes the discursive range of artefacts, performances, and technologies (such as the Internet and social media); this might seem like a collage. Globalization-from-below, which emerged to resist globalization-from-above, can be used to explain this postmodern perspective of globalization.

3.2.4 Globalization-from-below

The idea of globalization-from-below challenges the earlier discussed homogenization effort. It is

an array of transnational social forces animated by environmental concerns, human rights, hostility to patriarchy, and a vision of human community based on the unity of diverse cultures seeking an end to poverty, oppression, humiliation, and collective violence (Falk 1993, p39).

Protests from Seattle to Genoa in the late 1990s and early 2000s against the neoliberal globalization advocated by the WTO, attracted students, feminists, human rights groups, farmers, and ordinary people all believing in moral principles of equity and social justice, as well as supporting fair trade, international labour issues, human rights, women’s issues and the protection of the environment (Brecher, Costello et al. 2000; Klein 2002; Steger 2003). Therefore, globalization-from-below is biased towards a one-world community, which advocates a better future for all. Ordinary people around the world participated in these

protests to articulate their needs and interests as their governments, handicapped by conditions imposed by the IMF-led neoliberals of the West, were unable to protect them (Brecher, Costello et al. 2000). Advanced ICTs including the Internet have helped to link these groups and to unite them for the common belief they held (Steger 2003).

Reasons for the formation of such movements to resist globalization are diverse, but they all have one theme in common; instead of the promised 'better future for all', globalization through the pursuit of neoliberal economic policies by agencies such as the WB and the WTO has caused increased volatility, reduction in social welfare, exploitation, and oppression. The destructive competition brought by globalization is now advocating a "race to the bottom" or a levelling down of living standards for the majority of people. For example, when Brazil devalued its currency in 1999, more than 60 manufacturers in Argentina moved to Brazil to reduce their production costs and enjoy the tax breaks; similar incidents have happened between the US and Canada, where Canadian manufacturers have moved to the US to benefit from the corporate tax relief (Brecher, Costello et al. 2000). This destructive competition between countries drags down the wages and working conditions within countries as corporations are looking to maximize profits by minimizing costs. Moreover, this race to the bottom has also degraded the environment as governments are competing to attract investors by lowering environment protection standards. This downward pressure of globalization has specifically affected marginalized groups such as women, indigenous people, migrants, and minorities who are less able to resist; in fact, in many regions women are exposed to greater levels of exploitation and are also affected by the reduction of welfare services. As can be seen in the discussion below, increased polarization of wealth distribution has made the rich richer and the poor poorer. Amidst these, democratically elected governments' authority has been undermined by trade agreements and global financial institutions (Brecher, Costello et al. 2000). Thus, globalization-from-below could be seen as a collective critical response to these issues that affect the grassroots of society all around the world; most profoundly by the inequality globalization has caused.

3.3 Globalization and Inequality

Different forms of inequality within and across nations have always existed: economic, political, institutional, and power. Whether globalization has intensified or weakened these inequalities is an ongoing debate. There are optimistic scholars who view globalization as a

force for weakening global inequalities and increasing the standards of living for all (Friedman 2006), while many others view it as an inequality intensifier (Castells 2000b; Dickson 2001; Stiglitz 2002; Steger 2003; Beck 2007). The discussion below draws attention to both the inequalities between countries as well as the inequalities within countries.

3.3.1 Power

Global political discourses highlight the disparity of power among different states in the world. The nation states created after decolonization have not gained the same status as the imperial powers. For example, it is argued that the state formation in the Middle East is acknowledged to have undermined Arab interests and imposed an order that satisfied the interests of British and French imperial powers (Harvey 2003). Since the 1970s developing countries have increasingly demanded equal status in the global political arena, requesting more equal representation in the UN Security Council and the WTO, but they have had little or no success (Hurrell and Woods 1999).

New rules and norms, whether about investment, military security, environmental management, or social policy, are being made by those countries with the power to shape outcomes and to control international institutions. Less powerful states are, even more than in the past, becoming ‘rule-takers’ (Hurrell and Woods 1999, p1).

As stated earlier, the SAPs imposed on the borrowing countries by the WB/IMF have caused unprecedented suffering for the poor in the developing world. Stiglitz (2002) demonstrates how the enforcement of ‘one size fits all’ policies of the IMF has violated the democratic rights of people in the developing world. He argues that forcing governments to liberalize banking sectors, without proper legislations or competent players, had resulted in a lack of credit for farmers, causing a chain reaction of reduced food production, increased food prices and starvation.

3.3.2 Trade Agreements

As argued earlier, there is evidence to suggest that equal opportunities for world trade do not exist.

The Western countries have pushed for poor countries to eliminate trade barriers, but kept up their own barriers, preventing developing countries from exporting their agricultural products and so depriving them of desperately needed export income (Stiglitz 2002, p6).

The Uruguay round of trade agreements (from 1986 to 1994) within the WTO, promised trade liberalization that would benefit all countries; however the final agreement drawn up was biased against the interests of the developing world. This set of trade negotiations achieved 45% reduction in trade barriers on items exported by industrialized countries, while achieving only 20-25% reduction on items exported by developing countries (Woods 1999). As tariffs for processed goods produced by developing countries such as leather and textile fibre are high, these countries get locked into primary commodity production, which suffers from volatile demand and price declines. Developed countries also use non-tariff barriers such as quotas, to discourage imports from developing countries. Their heavily subsidised agricultural production causes problems for developing countries as the imposed barriers prevent developing countries' produce entering these markets, and thus reducing the quantity that can be sold; because the produce has to be sold in existing markets, the price drops. In 2002, more than half of the world trade was between industrialized countries; thus, Begg et. al (2005) conclude that "[w]orld trade is organized around the rich countries" (Begg, Fischer et al. 2005).

The Uruguay round of trade negotiations imposed another major barrier which affected developing countries with the agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). The globalization of intellectual property principles greatly benefited the US. For the developing world it was another major blow for their development as:

[i]ntellectual property rights are a source of authority and power over informational resources on which the many depend – information in the form of chemical formulae, the DNA in plants and animals, the algorithms that underpin digital technologies and the knowledge in books and electronic databases. These resources matter to communities, to regions and to the development of states (Drahos and Braithwaite 2002, p12-13).

Drahos and Braithwaite (2002) view this move of the developed world as creating "information feudalism". South Africa's battle against pharmaceutical giants to provide affordable drugs to people affected with Acquired Immune Deficiency Syndrome (AIDS) demonstrated the extent to which these intellectual property principles have affected the lives of the poor in the developing world. Education in developing countries is another major sector affected by TRIPS, as text books, computer software, and publications are now guarded by intellectual property laws. Pleas to formulate a fair agreement for developing countries are yet to be heard. The Free Software Foundation is one effort to challenge the

domination of intellectual property-led private firms in the software market; the initiation of low-cost editions of publications (to be sold in developing countries) is another such effort.

Member countries of the WTO signed the General Agreement on Trade in Services (GATS) in 1995, which aimed to progressively liberalize the service sector (de Siqueira 2005). Education is a service included in this negotiation. The GATS promotes profit-oriented participation, competition and other free market characteristics and the application of these principles to education is likely to reduce it to another commodity traded in the market. Clauses in the GATS prohibit differential treatment for national or international providers; thus it is difficult for developing countries to compete on fair ground. De Siqueira (2005) argues that even national regulations and publicly funded education could be challenged as “barriers” to free market competition under the agreement. Thus de Siqueira (2005) concludes that:

[t]he GATS regulation of education can jeopardise the sovereignty and autonomy of nations on a path that can lead to the loss [of] cultural diversity and local values; thus, hampering countries and their people’s lives while reinforcing homogeneity and making room for a new form of cultural/educational colonialism [information in brackets added].

The next section examines income and wealth inequalities within and across countries.

3.3.3 Income and Wealth

Inequality in income and wealth affects the affordability of food, education, health, and other necessities. It is vital to make a distinction between inequality and polarization in order to understand the effects of globalization on wealth distribution. Inequality is the uneven distribution of wealth while polarization is the process of faster growth of inequality in the top and bottom segments with respect to wealth distribution (Castells 1999b).

The difference in income between the 20% of the people living in the richest and the poorest countries reached 74:1 in 1997, increasing from 60:1 in 1990 and 30:1 in 1960 (UNDP 1999).

[G]lobalization today has already both widened the gap between the richest and poorest countries, and further increased division within, and across, societies (Held, McGrew et al. 2001, p46).

These divisions surface in many forms such as in the economy, in technologies, in education and in health; for example, in wealthy countries tertiary education enrolment rates rose from

2.2% in the 1960s to 59% in 2002, as opposed to a microscopic increase of from 1.3% to 4% in developing countries (UNESCO 2005). This widening gulf between developing and developed countries is also fuelled by the inequality in ICTs. For example, in 2002-2003 the personal computer usage rate per 1000 of the population was 284 in high income countries; for low income countries it was only 7 (World Bank 2006b). Dordick and Wang (1993, p5) summarise the dilemma of developing countries:

[p]lagued by barriers of poverty, poor health, low life expectancy, illiteracy, and little access to tertiary education, emerging countries must compete with advanced countries in a highly competitive global market place. What does the information society mean to them? Economic growth in the least developed nations of the world has stagnated or has been increasing very, very slowly. The gap between the developed and lesser-developed nations continues to widen annually.

Although China and India are identified as achievers of globalization (Friedman 2006), inequality of income distribution within them are considerable. For example, China's income disparity measured by the Gini coefficient (a statistical measure where a value of 0 expresses perfect equality and a value of 1 expresses maximal inequality) has steadily increased; it was 0.33 in 1980, 0.40 in 1994, and 0.46 in 2000 (Chang 2002). Moreover, during the past two decades, an increasing trend of income inequality was observed between countries while inequalities within countries show a mixed record. Polarization has been increasing in every region (Castells 1999b). The stark contrast between the two regions, developed and developing, with respect to economic, technological, educational, and health opportunities, is likely to urge mobility from developing to developed countries.

3.3.3.1 Migration

Migration has always been an important global process of social mobility; population growth, environmental problems, and poverty are important push forces of migration, while the demand for speciality labour has been a major pull factor (King 1995). However, there are barriers imposed on migration. The flow of skilled and educated workers, or brain drain, happens mainly due to intellectual unemployment and a sharp difference in real wages (King 1995). This high-skilled migration, particularly in the health sector, may have an adverse impact on developing countries, especially where graduate education is publicly funded. For example, Pakistan loses one third of its medical school graduates, while Ghana loses two thirds (World Bank 2006a). Some countries encourage skilled migration; for example, China, Cuba, India, the Philippines, Sri Lanka, and Vietnam train workers for migration.

Remittances, relieving pressure in the job market, development of wealthy diasporas, and the expectation of the return of migrants with improved skills have lead to such policies (World Bank 2006a), but it is also observed that the issue of brain drain is rarely considered explicitly in policy formation (World Bank 2002). Statistics for the year 2000 revealed that Sri Lanka was in an alarming state, where the incidence of brain drain (the number of migrated tertiary educated adults to the number of tertiary educated adults in the country) was as high as 40-50% (Ghose, Majid et al. 2008). Remittance to developing countries from migrant workers is often more than twice the amount given in international aid. In Sri Lanka, migrant remittance is greater than the value of the tea exports (World Bank 2006a). The Poverty Reduction Strategy Plan (PRSP) of Sri Lanka, stresses the importance of overseas employment; it proposes the initiation of private sector training institutes to train workers and the promotion of software and ICT-enabled industries to generate overseas employment (Government of Sri Lanka 2002).

The long-term gains of migration are supported by the ‘brain gain’ concept, which states that the emigrated intellectual elite of developing countries are a prospective source for the socioeconomic development of the home country (Hunger 2002). India and China are the widely cited examples. Comparing the amount of Foreign Direct Investment (FDI) attracted by India and China, Dahlman and Utz (2005) show that the wealthy Chinese diasporas helped to secure FDIs for China through remittances and trade links. Arora and Athreye (2002) argue that the success of the software industry in India was due to strong links with major external markets. Indian Diasporas in Western countries, especially in the US, have provided the necessary networking to overcome the barriers for the emerging Indian software industry. This demonstrates that not only remittances but also the networking and technology that the diasporas offer is valuable for economic growth in the home country (Arora and Athreye 2002; Lucas 2005). In this sense, migrations carry both advantages and disadvantages for developing countries.

In the globalized context, not only wealth but also labour markets become polarized; hence, an emergence of a “primary labour market” and a “secondary labour market” is evident in many contexts (King 1995), even within countries (Klein 2002). With respect to migrants, the primary labour market comprises of skilled and highly trained professional migrants, while the secondary labour market consists of insecure, poorly-paid, and often part-time

employment for unskilled workers. Although there are restrictions for migration, these are selective; thus allowing the ‘capable’ to seek better opportunities by migrating while restricting others. In observing labour market changes it is vital to understand the concept of the ‘Network Society’ that theorizes contemporary changes in society.

3.4 The Network Society

In Castells’ (2000b) theory of the ‘Network Society’, ICTs are recognized as an intensive and facilitating force for globalization. In fact, one could argue that he has placed too much emphasis on technology as he writes that “technology *is* society” [original emphasis] (Castells 2000b, p5). Castells argues that

[a] network society is a society whose social structure is made of networks powered by microelectronics-based information and communication technologies (Castells 2004, p3).

Castells’ analysis of the Network Society also demonstrates how capitalism and its dynamics have changed the social world. The significance of the theory lies in viewing technological changes as one of the main causal determinants of the contemporary process of globalization. Castells, in fact, introduces the notion of ‘information capitalism’, the “capitalist retooling using the power of [...] technology” (Robinson 2007, p132), demonstrating the impact of technology on capitalism.

Castells observes changes in ICTs since the 1970s as leading to ‘informationalism.’

Informationalism is a technological paradigm based on the augmentation of the human capacity of information processing and communication made possible by the revolutions in microelectronics, software, and genetic engineering (Castells 2004, p9).

Informationalism has three distinct characteristics: self-expansion, recombination and flexibility. Computers are the basis for developing new and more powerful computers, and this property is described by self-expansion. The property of recombination can be observed through the modularity of information technologies that allow them to be used in the construction of new technologies. Digitized information can be distributed in different ways to different devices using different technologies demonstrating flexibility (Stalder 2006).

In his theorization of the Network Society, Castells identified three processes whose interaction activated this new social structure, namely: crisis and restructuring of

industrialism; freedom oriented cultural and social movements; and the ICT revolution. In analysing this new social structure, Castells examines globalization and claims that approaching it with its economic dimension provides a better understanding (Castells 1999b). Castells analyses economic globalization placing emphasis on the change of spatial organization of production, leading to the concept of spaces of flows. He examines the internationalization of the economy through global financial markets; networked enterprise; and the individualization of work (this will be revisited) to provide evidence of changes in the economic sphere. He defines 'global economy' as the "capacity to work as a unit in real time, or chosen time, on a planetary scale" (Castells 2000b, p101). According to Castells, an 'informational, global and networked' economy emerged only in the last quarter of the twentieth century; he argues that the world economy has transformed into a global economy due to advances in ICTs as well as deregulation and liberalization policies.

Castells defines a network as a set of interconnected nodes, which does not have a designated centre, but may have a hierarchy. 'Network Enterprise' is a "*specific form of enterprise whose system of means is constituted by the intersection of segments of autonomous systems of goals*" [original emphasis] (Castells 2000b, p187); it is a key institution of the global economy. This networked form of social organization is also present in various forms in different cultural and institutional environments, varying from government military and political networks to criminal or terrorist networks. Their operations are supported by ICTs and their survival depends on the ability to assimilate information as well as innovate. Networks, due to their flexibility, scalability and survivability, are better suited to dynamic and turbulent environments than hierarchical structures, while communications within and reconfiguration of such networks can be highly efficient. However, one thing that requires emphasis is that:

the most critical distinction in this organizational logic is to be or not to be in the network. *Be in the network, and you can share and, over time, increase your chances. Be out of the network, or become switched off, and your chances vanish* since everything that counts is organized around a worldwide web of interacting networks [emphasis added] (Castells 1999b, p6).

Here, Castells indicates the risk of exclusion for some members of the network. This is an important element in his analysis, which will recur during the discussion.

The wealth of nations is determined by their long-term productivity, where technology is a major contributor; according to Giddens (1990), wealth is a factor that affects a nation's ability to be influential in global politics. Since the informational economy is characterized by self-expansion, nations lacking technology are at great risk of being marginalized in the process of globalization. Therefore, the role of ICTs is vital in stimulating development in the age of informational capitalism. Castells uses the metaphor of a double edged sword to demonstrate its implications. ICTs on one hand, allow

countries to leapfrog stages of economic growth by being able to modernize their production systems and increase their competitiveness faster than in the past. [...] On the other hand, for those economies that are unable to adapt to the new technological system, their retardation becomes cumulative (Castells 1999b, p3).

In order to utilize technology to leapfrog stages of economic growth and to compete in the global informational economy, a country should have human capital with relevant skills and knowledge; conversely, countries that do not possess this characteristic face the threat of being marginalized. Thus, to excel in the globalized world, human capital with relevant skills (such as IT skills and international language skills) as well as knowledge, are crucial (Rassool 2012). The type of work and employment observed in the contemporary world is very different to that of previous times; in fact, Castells argues that

[t]he most fundamental divide in the network society [...] is between self-programmable labor and generic labor (Castells 2009, p30).

This is further explored in the next section in connection with the rise of the knowledge economy.

3.5 Knowledge Economy and Transformation of Work

The contemporary world economy is identified by some as the knowledge economy (KE), to demonstrate the vital use of knowledge in the production and innovation process (David and Foray 2003). The term 'knowledge-based economy' or 'knowledge economy' is intended to signify a change from the economies of earlier periods due to: accelerated production and dissemination of knowledge; increased importance of intangible capital; success of innovation; revolution in technologies for knowledge and information production and dissemination (David and Foray 2003). Due to the accelerated production of knowledge, the level of depreciation is also high.

The WB (2008, p16) defines KE as an economy

that creates, disseminates, and uses knowledge to enhance its growth and development. [...] A successful knowledge economy is characterized by close links between science and technology, greater importance placed on innovation for economic growth and competitiveness, increased significance of education, and lifelong learning and greater investment in intangibles such as R&D [research and development], software, and education.

In a KE, production and services are primarily based on knowledge-intensive activities and there is a heavier dependence on intellectual capabilities than on physical inputs or natural resources (Powell and Snellman 2004); but it does not imply an economy consisting only of high-tech industries. This KE favours a new type of labour that is: individually responsible, flexible, autonomous, and multi-skilled. Requirement for unskilled labour is not eliminated; however, those routine works are increasingly automated, relocated, or outsourced (Klein 2002).

3.5.1 Generic-Work and Knowledge-Work

When industrial production began, the production process depended on routine labour, which had very little control over the work process and required little craft skills or knowledge (Rassool 1999). Transformation of work during the periods 1920-1970 and 1970-1990 for the industrialized countries indicate that during the first period, as the countries became post-agricultural, their manufacturing labour force increased, especially in the case of Japan where it increased from 16.6% in 1920 to 26% in 1970. The second period marked post-industrialization or de-industrialization where employment in manufacturing reduced, for example, in the UK manufacturing employment was reduced from 38.7% in 1970 to 22.5% in 1990 (Castells 2000b). However, this decrease in the manufacturing labour force in the industrialized countries was matched by an increase in manufacturing labour in other parts of the world, due to the relocation of factories from developed economies to developing economies.

This generic routine work in mass manufacturing is closely supervised and controlled; therefore basic literacy, numeracy, and discipline are adequate for this work. Increasingly, women enter the labour market into generic work, especially in the Export Processing Zones (EPZs) in the developing world, as flexible and low wage employees (Carnoy 1999). Not only women, but also ethnic minorities and illegal immigrants are seen to be locked into generic work (van Dijk 1999). Many developing countries such as Indonesia, China,

Vietnam, Mexico, the Philippines and Sri Lanka have established EPZs to produce garments, toys, shoes, electronics, and machinery for overseas clients employing thousands of young female workers. Routine work can be automated; the decreasing cost of automation allows manufacturers to eliminate routine work through automation. As manufacturers are competing in the global market, this generic labour has to compete with the decreasing unit costs of automated production. The global shift in interest from production to branding has squeezed production budgets even further; thus, wages and work conditions of these routine workers have degenerated in real terms. Describing her experience in Cavite, the largest free-trade zone in the Philippines, Klein (2002) explains:

manufacturing is concentrated and isolated inside the zone as if it were toxic waste: pure, 100 percent production at low, low prices. [...] Inside, it's obvious that the row of factories, [...] has been carefully planned to squeeze the maximum amount of production out of this swath of land. Windowless workshops made of cheap plastic and aluminium siding are crammed in next to each other, only a feet apart. Racks of time cards bake in the sun, making sure the maximum amount of work is extracted from each worker, the maximum number of working hours extracted from each day (Klein 2002, p 203-4).

These factories are important job creators for developing countries. Consequently governments are reluctant to impose labour laws and stringent checks on health and safety measures. Without the protection of labour unions and governments, worker exploitation is inevitable. Reduced government spending guided by neoliberal policies has also reduced state welfare for this segment of the population. Therefore, generic workers are more and more at a disadvantage in the contemporary world of work.

In his text "Knowledge Production and Distribution in the US," Machlup (1962, p9) proposed the hypothesis that

new technological knowledge tends to result in shifts of demand from physical labour to 'brain workers'.

Drucker (1970) predicted the need for effective executives or 'knowledge workers.' What Castells (2004) calls 'self-programmable labour' is closely related to the same concept. According to Castells, self-programmable labour has the ability to autonomously work on an assigned goal by searching and locating relevant information and assimilating them into knowledge that can be incorporated to achieve the assigned goal. Hence, they both concentrate on the capacity of the worker to work individually towards an assigned goal,

overcoming difficulties by taking independent decisions based on the available knowledge. Beck (2000) identifies the 'privileged' role of knowledge workers in the new society.

[T]he most important feature of this new society will be the centrality of knowledge as an economic resource. Knowledge, not work, will become the source of social wealth; and 'knowledge workers' who have the capacity to translate specialized knowledge into profit-producing innovations (products, technological and organizational innovations, etc) will become the privileged group in society (Beck 2000, p40).

Academics are a good example of knowledge workers. Due to their advanced interventions in research projects, even their colleagues may not be able to supervise them; they produce knowledge, ideas, and information. Writers, journalists, consultants, broadcasters, and software developers are other examples of knowledge workers. ICTs provide a wealth of information that can be harnessed by these professionals. Thus, they are able to divorce themselves from an employer and maintain a portfolio of work. This provides them with the capacity to work when and where they choose, allowing them greater flexibility and productivity. However, the risk of not finding interesting assignments to work on will exist; but, the greater the strength of the portfolio, the more likely individuals are to be awarded beneficial work. For example, consultants with experience operating as freelancers are able to avoid large overheads associated with consulting firms, thus, finding it much more beneficial for them.

Moreover, there is a critical difference between knowledge work and generic work.

The critical quality in differentiating these two kinds of labor is education, and the capacity of accessing higher levels of education; that is, embodied knowledge and information (Castells 2000a, p372).

Skills obtained in performing a job get outdated, especially in this KE because of the rapid rate of technological advances. For example, the 'occupational half-life' (the period of time for one-half of a worker's skills to become obsolete) is estimated to have changed from 7-14 years to 3-5 years (Employment and Training Administration 1989). But the learning skills acquired through education provides the ability to learn new skills, allowing educated workers to adjust to changing environments. Therefore, it could be argued that education is the key quality of labour required in this new economy (Castells 2000a; Dahlman and Utz 2005). As the economy moves towards knowledge-intensive production, the competitiveness of corporations depends on the knowledge and skills of their workforce (Brown, Green et al.

2001). As a result, unlike earlier, great emphasis is placed on lifelong learning to enhance the skills of working adults. For example:

[w]hen America was an agrarian economy, education for young people between seven and fourteen was sufficient to last the forty [sic] years of a working life. In the industrial economy, the age range of students expanded to between five and twenty-two. In the information economy, the rapid pace of technological change means that education must be updated throughout our working lives [information in brackets added] (Davis and Botkin 1994, p16).

Thus, lifelong learning today is increasingly becoming the norm.

3.5.2 Flexible Labour

As mentioned earlier another major development in the global economy is the increasing demand for flexible labour. The blurring of boundaries for competitors in the global economy has intensified competition; the rise of ‘network enterprise’ (Castells 2000b) is an effort to increase the flexibility of firms to adapt to these global changes. Capitalist firms with profit motives tend to produce homogeneous items at low cost (Ritzer 2004); these are then branded and marketed, achieving high profit margins (Klein 2002). In order to produce items at the lowest cost possible, production is either relocated to areas with cheap labour and less stringent environmental laws, or outsourced (Klein 2002; Friedman 2006). However, cost reduction in itself is not sufficient; invention, innovation and flexibility (all of which are greatly influenced and facilitated by the ICTs) are necessary for success. Hence, information technology and the competence to apply it must be integrated into this new production function (Castells 2000b; David and Foray 2003).

Flexibility of production has transformed working arrangements drastically and these can be analysed under the following factors: working time, job stability, job location, and the social contract between the employer and employee (Carnoy 2000). The traditional form of full-time and single career over lifetime pattern of work is fading due to the requirement of increased flexibility; thus part-timers, flexi-timers, self-employed, limited-term jobs or what Beck (1999) describes as ‘fragile’ work arrangements are becoming the norm. This produces a great divide between traditional full-time workers and fragile workers, sometimes in the same organization. During the 1975-1990 period, the number of male part-time workers increased by 42.6% while female part-time workers (normally in low-skilled and low-paid work) increased by 253% (Castells 2000b). Some of these transformations are due to the

individualization of labour in the work process that became possible with the use of new technologies (Castells 2000b). For example, today a complex project can be divided into tasks and allocated to different individuals; their work can be coordinated using advanced networking technologies; they can be working from home, office or even from another country. Today, subcontracting, outsourcing, and off-shoring are all made possible by ICTs. Advanced technology has eliminated particular forms of work by replacing them with machines, but it has also created new forms of work. These changes in work practices and the nature of work demands the need for ‘worker adaptability’ and ‘willingness to learn new skills’ (Rassool 1999).

With globalization, demand for specialist labour has risen; due to the advancement of ICTs, educated workers in the developing world are better able to utilize the opportunities available in the global market (Manicas 2007). Outsourcing of routine work to low wage, educated labour in highly connected areas of the world has given India a competitive edge. For example, Indian accountants are hired to prepare tax files for American clients; the Indian accountant performs the routine part of the calculations in Bangalore, while the tax consultant in New York or California performs the complex work that requires specialist knowledge (Friedman 2006). Further, radiologists in India are covering the out-of-hours work for a fraction of American radiologists’ overtime pay (Friedman 2006). As a result, some visualize a ‘flat world’ or a level playing field created by globalization (Friedman 2006). However, for such an optimistic stance, a good level of education, knowledge of international languages, and infrastructure facilities providing connectivity are pre-requisites that are generations away for some parts of the world, still struggling to ensure universal primary education.

Literacy rates have traditionally been used an indicator of education and standard of living in a country.

But in the information age, literacy is not sufficient to ensure a high-quality work force; higher education is needed. A useful measure is the percentage of students attending tertiary school in their age groups (Dordick and Wang 1993, p111).

Dordick and Wang’s argument is important in reviewing the case of Sri Lanka, where the literacy rates are higher than the South Asian average, but Higher Education (HE) enrolment rates are low. With the rise of global KE, there has been an increased interest in HE in almost all parts of the world.

3.6 Higher Education in the Globalized Context

Higher Education can be seen as both an actor and a reactor to the phenomenon of globalization (UNESCO 2004, p8).

As a knowledge creator and a disseminator, HE produces knowledge that drives new technological advancements and innovation. A good example is the World Wide Web (WWW), which was originally developed by the academic community, but now plays a major role in information dissemination through the Internet. As such, HE is an actor which provides impetus for globalization. On the other hand, HE is also shaped by globalization. With the dawn of the KE, it is logical to expect a profound impact on HE. Indeed, globalization has created an explosion of demand for education (Carnoy 2005). In 1950, there were 370 colleges and 27 universities in India, which increased to 8737 colleges and 272 universities at the end of 2002, demonstrating the rising demand for HE (Manicas 2007). Although the process of globalization has had a profound effect on this development, critics identify privatization, marginalization, and the reduction of HE's output to commodities as effects of globalization on HE (Manicas 2007). The reduction of educational output to commodities links with the earlier discussion of the GATS. Marginalization recurs here as a form of inequality in education. The following discussion demonstrates some important changes observed in contemporary HE.

3.6.1 Changing Demographics

HE in the globalized context has experienced an increasing demand, as well as changing demographics of student population. With the emergence of new social movements and cultural changes, women's role in society has been transformed. More women have entered the labour market and dual career households have become more common (Castells 1999a). Moreover, in many developed countries, women started to enter HE in large numbers creating a change in the composition of student population; this trend has now extended to developing countries.

Today, access to HE is a major priority in the Western world in order to maximize human development, where the lack of opportunity for HE due to class, race, gender or disability is being actively addressed by governments. Hence, attempts are made to allow differently abled, ethnic minorities, and lower social class groups to access HE (Archer, Hutchings et al.

2003). However, in developing countries, globalization and social transformations have brought HE access to females, who had earlier been deprived of HE. For example, in Sri Lanka the number of females entering HE increased from 10.1% to 51.7% between 1942 and 2001 (Gunawardena 2003). But, this change is yet to affect other deprived groups.

Already in 1962, Machlup wrote that “in the eighteenth century knowledge doubled every fifty years, it now doubles in less than ten years” (Machlup 1962, p122), originating the popular concept of ‘half-life of knowledge’, which denotes the span of time, before knowledge in a particular field becomes out-dated. This concept, as discussed earlier, is extended to other areas such as ‘occupational half-life’; today competitiveness of corporations depends on the knowledge and skills of the workforce. This, along with the reduction of the half-life of knowledge has placed great emphasis on lifelong learning. As a consequence, working adults who missed out at school-leaving age despite being academically qualified, increasingly seek HE opportunities, which has led to demographic changes in the student population. For example, since independence Sri Lanka has only managed to increase its state university intake to approximately 3% of the school leaving age cohort (World Bank 2005). In 1963, 1.7% of the population above 30 years of age were qualified in GCE A/L while 0.4% had a degree or higher qualification. In 1994, it was 7.8% and 1.9% respectively and in 2000, 10.2% and 2.3% (1994 and 2000 statistics exclude Northern and Eastern Provinces) (Department of Census and Statistics Sri Lanka 2011c). Thus, there are generations of people who were deprived of HE. Open Universities and institutions that provide access to workers target this segment of HE seekers. Consequently, many students enrolling in HE today are older, working, and prefer part-time studies. They require more flexible forms of study and are good candidates for distance education (DE).

3.6.2 Increasing Demand/Supply

As discussed above, several economic and socio-political factors have increased the demand for HE. The increasing payoffs for HE in the knowledge-intensive global economy and the desire to obtain well-paid and secure jobs in the intensively competitive labour market increase aspirations for HE. Developed countries with ample education systems in place, aging populations and decreasing birth rates have become restricted markets for private education providers, and developing countries with increasing school-aged population are seen as a potential new market to be exploited (de Siqueira 2005).

While developed nations spend a considerable amount of money on education, developing nations' educational budgets compete with many other necessities (such as foreign debt services, health and sanitation provision or basic utility provision), despite the fact that education is an important contributor to development (Haddad and Jurich 2002; Giddens 2006). According to the UNESCO Statistics Institute (2007), North America and Europe allocated more than half of the total global public education expenditure to educate less than 10% of the world's young people, while sub-Saharan Africa used 2.4% of spending to educate 15%. This is one of the reasons for the stark inequalities in the quality of education and educational opportunities between these regions.

Government interventions to expand HE, to offer opportunities for earlier excluded groups, is a major development seen in the developed countries (Brown, Green et al. 2001). Bloom, Canning and Chan (2006) accuse development agencies of concentrating heavily on primary education and neglecting HE, which is a vital contributor in today's KE. They argue that India's leap forward was due to its long-standing policy for promoting tertiary education. A large pool of English-speaking skilled workers has indeed given India an edge over their competitors in 'onshoring' jobs from English speaking developed countries (Rassool 2012). On the other hand, Gulati (2008) argues that the policy to promote HE has left many Indians illiterate. The WB has been supporting basic education for decades; however, its interventions through the SAP have had negative impact on school enrolments due to the user costs levied on people already poor (Nimoh 2002). Although in the 1970s and 1980s the WB had promoted education at tertiary level, the efforts were ad hoc, since the internal review of tertiary education projects in 1992, the WB has been actively involved in this promotion (World Bank 2002). For example, the WB funded a project to improve quality and relevance in undergraduate education in Sri Lanka by improving/upgrading resources for IT and English education, aiming to provide a balanced tertiary education that is tuned to the demands of the contemporary labour market (World Bank 2010).

However, in many countries with already restricted budgets, expanding access to HE in traditional modes is difficult if not impossible (Haddad and Jurich 2002). In this context, DE, where students study in their own time, at a place of their choice, with little or no face-to-face contact, is seen as a remedy because, it is argued, if managed properly DE can offer

quality education to masses at a lower unit cost than conventional education systems (Perraton 2000; Rumble 2001; Bates 2005).

The increase in demand for HE was followed by policies to increase supply by commercial and non-commercial universities in the developed world; for example, the UK has successfully increased the supply of HE through non-commercial means, but recent government initiatives seem to consider commercial provision as the key to further increasing access (Labi 2011). Non-commercial HE institutes have also extended their reach, especially to developing regions of the world, by collaborating with the existing HE institutions and also by opening new campuses. In the developing world too, governments have increased the supply of HE, but these increases are yet to provide substantial access.

3.6.3 Privatization

Private sector involvement in HE is greater than ever before, for example the Apollo Group (www.apollogrp.edu) specializing in providing HE for working adults. The lack of capacity of governments to meet the demand, the WB and the IMF policies advocating the restructuring of educational systems in developing countries, and the liberalization of trade in services have opened a window of opportunity for profit oriented firms, especially in the developing world. The liberalization of services such as education has favoured developed nations; developing nations unable to compete on equal grounds have become recipients of services. As “knowledge is the most highly valued commodity in the global economy, nations have little choice but to increase their investment in education” (Carnoy 1999, p82). The conditions imposed on developing countries through SAPs restricting government spending on services (including education), and the WTO efforts to liberalize trade in services through GATS, even with high resistance from some groups, mean that governments have little choice other than allowing private enterprises to supply the HE market. For example, the Sri Lankan HE market, which was initially closed to private enterprises, has been opening to them since the 1980s, with great opposition from left-wing political parties.

Many types of private providers are in the HE market; commercial (for-profit) educational institutes are common in the US, and they provide in-person education or eLearning to students. Another type is for-profit consortia; for example, U21Global is formed by

Universitas21 (a network of universities from different countries) in partnership with Thompson Learning as a for-profit consortia to serve the HE market (Bates 2005). Not only universities but also corporations have set up HE institutions targeting the needs of their employees. An example is the Motorola University, owned and operated by Motorola Inc (Yan 2004). There are also international private school systems that provide HE opportunities; International Baccalaureate (IB) is a group that work in partnership with IB World Schools in 138 countries, and the Beaconhouse Group is functional in 9 countries including the UK and Pakistan (Beaconhouse School System 2012).

Another form of privatization is the shift from public educational funding to either cost-recovery methods or cost-sharing methods. Australian HE institutions charge international students full fees, while charging only 25% to home students; institutions in the UK also practise such a policy towards international students and home/EU students (Varghese 2007). Committing part of future income in exchange for financing HE and student loans are other popular schemes that illustrate the shift from institutional financing to student-based financing (Varghese 2007). As discussed earlier, education is a tradable commodity under the GATS, which represents a set of multilateral rules that govern international trade in services (Varghese 2007) to promote and regulate foreign investments in the educational sector.

3.6.4 Educational Technologies

Internet technologies that intensified globalization were believed to create a revolution in HE (Pittinsky 2003; Manicas 2007) by providing access across the globe to many who were excluded from the traditional system. However, today it is feared that it will widen the gap between the ‘haves’ and the ‘have-nots’ (Tinio 2003; Carr-Chellman 2005a; Zhang 2005), manifesting yet another inequality. Although it has yet to achieve the expected revolution in HE, the influence of the Internet and more broadly, of ICTs, is widely felt in HE.

Many private universities, especially in Malaysia, South Africa, and China, have established relations with universities in the developed world; they use interactive technologies to communicate with distant academics and researchers (Carnoy 1999). In the US as well as in other countries such as China, India and Malaysia, attempts are made to start for-profit institutions providing HE through eLearning. Some of them, such as University of Phoenix

Online (part of the Apollo Group mentioned above), have been highly successful, while many others including prestigious universities such as Colombia University, New York University, University of Melbourne, and the UK e-University project have lost vast amounts of money in eLearning for-profit operations (Bates 2004).

Today, educational technologies are able to provide access for different community groups who are unable to attend universities for various reasons such as: disability, geographical barriers, caring duties, engagement in armed services or imprisonment. Educational technologies also allow students to enrol and participate in programmes offered in other countries; for example, Massachusetts Institute of Technology (MIT) provides its course materials online for free public access, a move that is admired by many in the developing world. The most profound effect of educational technology is felt in the DE systems. As is the case elsewhere, Sri Lanka is also attempting to provide mass HE using ICT and DE.

3.7 Sri Lanka in the Global Context

The Sri Lankan economy traditionally depended on agriculture but today the service sector contributes 59.6% to the GDP, followed by the industrial sector with 28.5% (Department of Census and Statistics Sri Lanka 2007). Much work is required to strengthen the country's four KE pillars: business environment, dynamic information infrastructure, human resources, and efficient innovation systems, to enable the Sri Lankan economy to gear itself towards developing a KE (The World Bank 2008). Unlike other resources, human capital cannot be enhanced within a short span of time even when ample resources are available. In the globalized world, "knowledge can mean the difference between poverty and wealth" (The World Bank 2008, p16); therefore, it is vital that Sri Lanka adjusts to compete in the global KE by unleashing the potential of its human resources.

Although the government is on target to achieve the Millennium Development Goals (MDGs) relating to education and health, it has failed to match this success in poverty reduction (NCED 2005). Promoting self-employment has not provided the expected results, partly due to the lack of entrepreneurial capacity amongst the rural poor. Therefore, creating employment for the rural poor has now become a priority. Sri Lanka is burdened with a high open unemployment rate of 9% (Riboud, Savchenko et al. 2007). Rama (2003) argues that unemployment in Sri Lanka, to a large extent, is voluntary; and the reason for unemployment

is not a shortage of jobs, but queuing for more secure, well-paid, “good” jobs. This phenomenon has also been observed in other countries; for example, in Egypt, people queue for government jobs that offer attractive salaries (Assaad 1997). The ability to survive without a job and wait for a good job may stem from the readiness of Sri Lankan families to support their children over an extended period of time. At the same time, there are large numbers of unfilled well-paid jobs in the economy. On the one hand, rigid labour laws in Sri Lanka may discourage employers from hiring non-ideal candidates; because once hired there is hardly any flexibility to fire an employee. On the other hand, these unfilled positions may also be due to a lack of relevant skills, because the prevailing HE system is less responsive to market needs. For example, the IT work-force survey 2007 revealed that there were 5,755 jobs on offer, but only 2,216 IT graduates were expected to join the work-force (Sri Lanka Information and Communication Technology Agency 2007). Thus the PRSP has acknowledged that:

[s]uccessfully meeting Sri Lanka’s economic challenges will require an educational system that better meets the needs of the country. *The present system leaves far too great a share of our human resources under developed* [emphasis added] (Government of Sri Lanka 2002, p11).

Increasing the capacity in the traditional HE system has been attempted since 1980s, but has failed miserably. Although many private institutions provide good quality programmes, some even offering the UK, Australian, and the US university degrees, high fees charged on these programmes have hindered the participation of many potential students. A large-scale survey (Nanayakkara and Wijesuriya 2007) to discover options for HE provision has revealed that the vast majority of students out of the 2010 respondents who failed to secure a place in the state university system chose DE provided by state universities to pursue HE. Out of the sample, 80% who did not pursue HE were unable to afford it due to financial difficulties; therefore, it is also important to consider the affordability of HE provision.

The Sri Lankan government plans to double the intake for local universities by 2020 (Ministry of Finance and Planning 2010). Providing quality and relevant education at higher levels to the rural poor, especially for females, is also among the identified measures in the PRSP (Government of Sri Lanka 2002), which is required from each country borrowing from the World Bank/IMF. Poverty stricken rural females seek employment in garment factories or migrate as domestic workers; neither of these provide them with job security or

other social benefits. The rationale for increasing opportunities for higher levels of education is largely due to the belief that it would allow the rural poor to benefit from the transformation of work that accompanies globalization (COL International 2002). Therefore, extending HE opportunities using DE through state universities at a subsidised rate is a good choice in providing affordable HE for the masses. However, according to the WB, “in Sri Lanka, investing in tertiary education actually generates a lower rate of return compared to those who finish only secondary education” (World Bank 2008, p62). This phenomenon was observed throughout the periods 1992-3, 1997-8 and 2001-2 (Riboud, Savchenko et al. 2007). Given such conditions, it is arguable whether a rational individual would select the pursuit of tertiary education. HE that is promoted today is different from the traditional in-person education provided by the state universities; it is more flexible and one can be employed while also pursuing one’s studies. Promoting part-time HE provides the additional benefit of accumulating credits and work experience at the same time.

The PRSP (Government of Sri Lanka 2002) as well as the ‘Mahinda Chintana Vision for the Future’ (Ministry of Finance and Planning 2010) emphasize the importance of international language skills, technology skills and soft skills that enable the holder to enter the international labour market. Since a large pool of skilled workers with international language skills is an incentive for attracting FDI, Sri Lanka aims to produce skilled employees capable of working either at home or abroad.

ICT is one sector that the government is keen to develop. As stated earlier, India has become a leader in the outsourcing industry, and an important player in the global software industry. The wish to emulate its success may be one reason for the promotion of the ICT sector in Sri Lanka. Software development is one industry that can be initiated with relatively minimal capital, if the required human capital is available. After decades of conflict, Sri Lanka is left with more than 10,000 disabled soldiers (Asian Development Bank 2003). It is hoped that some of these people could also be integrated into the economic development through ICT sector jobs where the demand is high. The MDGs also place emphasis on extending the benefits of new technologies to the whole community. Thus, in achieving these targets, the government is investing heavily in ICTs for DE in order to provide HE for the masses.

3.8 Conclusion

Globalization has transformed the economic, cultural, political, and technological spheres in the contemporary world. Not only does it compress the world, but it also increases the consciousness and interdependence of the world as a whole. However, the benefits of globalization have not been equally distributed globally. The world of work in this globalized world distinguishes between generic work and knowledge work where the level of education is the characteristic defining a knowledge worker. The deteriorating conditions for generic workers demonstrate the need for higher education to succeed in the contemporary knowledge-economy; hence, higher education is valued more than ever. Increasing demand for higher education, caused by economic gains and the participation of different groups, has changed the demographics and the organization of higher education. The abundance of technologies appropriate for instructional delivery, and the flexibility provided by them, support the use of ICTs in distance education as a provider of higher education for the masses. In this context, Sri Lanka is attempting to use ICTs in distance education to facilitate capacity-building in its move towards a knowledge economy.

4 Distance Education and Technology-Mediated Education

4.1 Introduction

As argued in Chapter 3, contemporary economies rely heavily on knowledge as a key to success, and higher education (HE) in this context is a requirement rather than an option. The transformation of work holds the modern worker responsible for updating his/her knowledge and skills in order to be competitive and employable, making lifelong learning a necessity for survival. Distance education (DE) with the use of modern technologies offers flexible delivery, which is well-suited to adult learners.

The chapter discusses four themes on DE, the use of technology in DE and its role in contemporary Sri Lanka. First, it examines a conceptualization of DE; second it highlights the role of technology in DE, taking into account technology distinctions and the importance of pedagogy. Third, a selection method for appropriate technology is discussed, assessing some popular technologies using the ACTIONS framework; some emerging technologies in DE and quality issues raised when using technology are also analysed. The final theme is the use of technology in Sri Lankan DE, which presents contemporary efforts to utilize DE and ICTs in order to fulfil the unmet needs of many Sri Lankans aspiring to pursue a degree.

4.2 Conceptualizing Distance Education

Distance education (DE) has existed for more than 250 years as an advertisement in the Boston Gazette for Correspondence Education in 1728 (Valore and Diehl 1993) demonstrates. From the mid 19th century with the pioneering work from Sir Isaac Pitman, DE flourished in Europe (Holmberg 1986). The successful DE implementation by the Open University of the UK (OUUK) has influenced many other countries' implementation of the "Open University" model.

The concept of DE, as proposed by Holmberg (2001), relies on consistent and non-contiguous communication between the learners and the educational institution. This non-contiguous communication can be either one-way (course material sent to a distant student)

or two-way (communication between students and the educational institute for tutoring). DE possesses some unique characteristics: quasi-permanent separation of teacher and learner, educational institutes' influence on material preparation, the quasi-permanent absence of a student group, and in most instances the use of technical media and the provision of two-way communication (Keegan 1990). As indicated above, there are different models as is the case with the OUUK.

DE caters for a diverse range of needs in different settings. DE gives access (to school education or HE) for a large number of students. It allows business organizations to make training available to upgrade worker skills, individuals to engage in lifelong learning, and governments to offer training. DE also allows the delivery of instructions to more rural areas as well as widening access – for example, to armed forces personnel and disabled people (Potashnik and Capper 1998; Rumble 2001; Bates 2005; Moore and Kearsley 2005). The notion that DE can extend educational opportunities at a lower cost than conventional education (Rumble 1987; Tatto, Nielsen et al. 1993; Chandrasiri 2003; Loxley, Ho et al. 2003; Jamtsho, Rinchen et al. 2010a), although debatable, has been an important driver for its spread. Sparsely populated countries such as Canada and Australia have the need to reach distant learners while densely populated countries such as the UK have adopted it for other reasons such as to provide a second chance for people who missed out on HE immediately post-school. More recently as has been discussed in Chapter 3, an increasing demand for education, changes in the demographics of learners, and need for flexible learning have also accelerated the use of DE, especially in HE.

4.2.1 Definition

‘Distance Education’ refers to [...] the forms of organized learning which are based on, and seeks to overcome, the physical separation of learners and those [...] involved in the organization of their learning. This separation may apply to the whole learning process or only to certain stages or elements of it. Some face-to-face contact may occur, but its function will be to supplement or reinforce the predominantly distant education. A good deal of private study will typically be expected of the student (Bell and Tight 1993:7-8).

Thus, DE is highly suitable for HE, which places a much greater emphasis on theory reinforced by practical work, and includes a sizable component of individual study, as an educated adult learner is better able to manage the self-learning component of this mode. DE

places great emphasis on the educational material that is used by masses of students for independent study; thus the quality of educational material is critical. For example,

[a] bad course written by one teacher which will be studied by 10000 students will do more harm than the oral instruction of the same teacher in class room (Keegan 1994, p31).

Thus, assuring quality in learning material is of great importance in DE and will be discussed later in the chapter, and again in the data discussion.

Moore and Kearsley (2005, p2) define DE as the:

planned learning that normally occurs in a different place from teaching, requiring special course design and instruction techniques, communication through various technologies, and special organizational and administrative arrangements.

Here they emphasise the importance of technology mediation to bridge the distance.

4.2.2 Transactional Distance

The ‘distance’ in DE is not the simple geographic separation of learners and teachers; it is also a pedagogical concept (Moore 1993). In transactional distance theory, a perceptual distance in all educational transactions is identified (Wheeler 2007). This transactional distance could be due to the differences of intellectual capability, demographic variables or to cultural differences, and can cause misunderstandings. Increased dialogue in the learning transaction is likely to reduce misunderstandings and thereby the transactional distance (Moore 1993).

In the literature, the terms DE and open learning are sometimes used interchangeably, for example by Perraton (2000). In some contexts, different terminology is used to denote DE. For example, in Sri Lanka, ‘external education’ is considered a synonym for DE; hence a degree learned in distance mode is an ‘external degree’. Both full-time and part-time study options are available with DE. However, in most instances students learning in distance mode study part-time because of other demands on their time such as employment or caring duties. The Open University of Sri Lanka (OUSL) caters for both these groups of learners, with many of its engineering students, for example, studying full-time.

The practice of DE has enabled the division of labour to a great extent in the education process; preparation of teaching material, distribution of teaching materials, and provision of small group teaching/learning are organized tasks that can be performed by subject experts,

administrators, and tutors respectively, demonstrating the possibility of the division of labour (Keegan 1994; Perraton 2000). In fact, the division of labour is a precondition that has made university study at a distance possible and thus the division of labour is a “constituent element of distance teaching” (Keegan 1994, p113). This concept of the industrialization of education and the view of DE as a more industrialized version of education is Otto Peters’ contribution to the DE discourse (Peters 1983; Keegan 1994). In fact, he declares that “Distance Education is, indeed a typical product of industrial society” (Peters 1993, p57). However, critics of his position claim that he has exaggerated the difference between conventional education and DE (Keegan 1990).

In the pre-industrial society, people gathered (face-to-face) to learn literacy, craft and trade skills. Levinson (1999) argues that as people in that society engaged in a smaller number of tasks they were able to devote more time to each task, resulting in more time for learning. In the industrial society, literacy skills were required by masses in order to work in factories, and these were provided using large classrooms. As the postal service, and radio and television technologies became popular and accessible to many, it was possible to deliver educational content to distant learners further ‘rationalizing’ the process, or as interpreted by Peters’ (1983) achieving the same outcome with comparatively fewer resources. In contemporary society it is difficult, if not impossible, for a large number of people to engage in in-person education due to issues with resources such as time and money. Therefore, this more ‘rationalized’ form of study that allows people to achieve their goal of learning whilst continuing their normal daily activities is increasingly valued. Today’s technology allows for the creation of both small group learning and mass class learning experience at a distance.

4.3 The Use of Technology

DE uses a variety of technologies to provide learning materials to its distant students and to facilitate communication. As new useful technologies have become available, DE has been influenced by these technology waves from time to time. For example, even though telegraph and telex were available they were not much used for DE; telephone had limited use in DE but is a significant part of the home Internet infrastructure in most places; radio, the Internet and the World Wide Web (WWW) are used significantly for DE delivery. Rumble (2001) lists four phases of DE, namely: correspondence education (developed from

1840); the use of broadcasting to support more remote classrooms (by 1940); the development of multimedia systems to support teaching (from the 1960s); and the development and growth of personal computers, the Internet and the WWW for teaching and learning (from the mid 1980s). The viewpoint presented here is that the number of phases identified is not that important, but that the phases of DE are associated with technology changes in the world.

Contemporary technologies permit DE to utilize two-way communication such as video conferencing (e.g. MediasiteTM), and enable a true virtual experience of learning and teaching. The Open University of Catalonia in Spain, the University of Phoenix Online, and the University of Maryland are some of the true 'virtual universities' that are completely digital (Bates 2005). Not all universities that utilized this strategy were successful in their operations. For example, the e-University project in the UK was abandoned in 2004 due to increasing costs, a lack of income and failure to attract students.

The terms 'online learning' and 'eLearning' are usually used interchangeably in the literature. But, Bates (2005) defines online learning to be the learning that happens using the Internet and the web, and eLearning to have a broader spectrum of supporting media comprising of any form of telecommunication and computer based learning. However, Littlejohn and Pegler (2007) argue that it is difficult to be precise about what eLearning covers, as the technology that makes it possible is continuously developing. Today eLearning is used both as a tool for supporting classroom education, as well as a technology for DE delivery.

Learning that uses portable technologies such as hand held computers, MP3 players or mobile phones is defined as Mobile learning or mLearning (Quinn 2000); mLearning can be viewed as the next step of eLearning. It consists of smaller sized information portions to be accessed by a multi-tasking user, anywhere anytime. Banks (2008) argues that mLearning is particularly suited for developing countries as an alternative where books and computers are in short supply. As mobile phones are more accessible than the Internet or computers in many developing countries, utilizing them for educational purposes has high potential. However, small screen sizes, battery life, compatibility of learning material (to screen size of

different devices) and content security issues are some of the technical challenges for mLearning.

Modern HE institutions offer a mixture of in-person and distance learning, full-time and part-time study options, utilizing in-person or remote interactive sessions, automated systems, synchronous and asynchronous communications between learner and teacher (and among learners). This multifaceted nature of educational institutions caters to the varying demands of today's learners.

4.3.1 Technology-Mediated Education

The use of media for education dates back several centuries to the development of writing and the alphabet. Each new media is criticised as being destructive of social norms and therefore negative. However, they often create new social norms, disrupted by the latest technological innovation. By the time a new media is introduced, previous media forms are deeply rooted in everyday life and therefore considered 'normal'. For example, when text was first used instead of personal verbal instructions, it was criticized as being 'inhumane' (Greene 1951); today using text is considered natural. Similarly television was initially criticised for destroying family life; but now it is considered as being more family-oriented (Maccoby 1951) than the use of computers (Gopnik 2011). Research on response to media has shown that people's responses to media are 'social and natural' and that 'media are more than just tools' (Levinson 1999; McLuhan 2001; Reeves and Nass 2002).

Media can be described as the

generic forms of communication associated with particular ways of representing knowledge. [...] Each medium not only has its own unique way of representing knowledge, but also of organizing it (Bates 2005, p43).

Text, audio, and video are all examples of media (Moore and Kearsley 2005). There are five important media used in education: direct human contact (face-to-face), text, audio, video, and digital multimedia (Bates 2005). One medium can be delivered using various technologies. For example, technologies such as satellite, cable, and video cassettes are able to deliver the single medium of video.

4.3.2 Technology Distinctions

There are several important distinctions of technologies that require attention when a technology is being considered for educational delivery. Broadcast (one-way) technologies such as television, print and radio guarantee the delivery of a common standard learning material. On the other hand, two-way technologies such as telephone and video-conferencing allow interactions between learners and teachers, as well as between learners. In addition, the distinction between synchronous and asynchronous technology is also important, because synchronous technologies provide the benefit of spontaneity and immediacy, while asynchronous technologies offer more control and flexibility of the learning process to the learner. For example, broadcasting is a synchronous technology where users have to be present at the time of the broadcast; however, it later became technically and financially possible (for an increasing number) to record broadcasts for later personal review on a cassette, thus creating an asynchronous version of an originally synchronous technology, where users can select their own time of access, and can access on multiple occasions. A text-based online forum is a popular asynchronous technology, where students can contribute to a discussion by posting their thoughts at a time convenient to them.

Table 4-1 classifies educational technologies according to structural characteristics. It demonstrates the potential of digital media as an educational tool, with the ability to combine text, audio and video, and also presenting itself in either synchronous or asynchronous form.

Table 4-1: A Classification of Educational Technologies by Structural Characteristics

Media	Broadcast (one-way) applications		Communication (two-way) applications	
	Synchronous	Asynchronous	Synchronous	Asynchronous
Face-to-face	lectures	lecture notes	seminar, tutorials, lab classes, demonstrations	
Text		books, course notes, supplementary material		mail, fax, correspondence tutoring
Audio	radio	audio-cassettes	telephone-tutoring, audio-conferencing	
Video	broadcast TV, cable TV, satellite TV	video-cassettes	video-conferencing	
Digital	web-casting, PowerPoint	websites, multimedia, DVDs, CD-ROM, databases Blogs	web-conferencing, chat	email, online discussion forums

Source: Adapted from Bates (2005)

4.3.3 Technology and Pedagogy

“Pedagogy before technology” (Beetham and Sharpe 2007, p3) is a common phrase used to suggest the importance of pedagogy because many institutions place great emphasis on acquiring and implementing technology without due consideration of the underpinning pedagogy. Mayes and de Freitas (2007) propose three pedagogical perspectives for eLearning: an associationist perspective; a cognitive perspective; and a situated perspective. They argue that in an eLearning environment different pedagogical principles take precedence at different stages of learning. For example, training of skills could involve an associativist account, while deep learning could employ a constructivist pedagogy; in order to provide meaning to the whole process a situated perspective might be assumed, providing engagement with a social setting. It is important to note that social engagement in learning is grounded in Vygotsky’s (1978) social interactionist theory of learning.

4.4 Appropriate Technology

The selection of appropriate technology needs strategic as well as tactical considerations. As there are no agreed set of criteria for the selection of media and technology for education, “technology decisions have tended to be made primarily for commercial, administrative or

political reasons” (Bates 2005, p46). For example, technologies adopted in the African Virtual University (AVU) project have been criticized for their high cost and limited accessibility (Amutabi and Oketch 2003; Munene 2007); in Sri Lanka, with only 0.7% of citizens having Internet access in 2001 (Department of Census and Statistics Sri Lanka 2004), the government’s investment in developing online DE programmes also gave cause for concern about levels of accessibility.

ACTIONS is a framework proposed by Bates (2005) for technology selection and application in Open and Distance Learning (ODL); this framework also represents the order of priority of each of the factors considered.

1. Access – the accessibility of a technology for the target learner groups.
2. Costs – the cost structure of technology (per student cost and the variation of costs with student numbers).
3. Teaching and learning – types of learning required on a particular course, instructional approaches that suit these courses, and technologies that can support them.
4. Interactivity and user-friendliness – the types of interactions supported by a technology and the ease of use.
5. Organizational issues – organizational requirements, barriers to be removed, and changes required in an organization to adopt the selected technology.
6. Novelty – how new is the technology? Will it be out dated or replaced by a new technology soon?
7. Speed – time required to prepare new courses and to make modifications to existing course materials.

Access is identified as the most important criterion for technology selection, because in ODL widening and increasing participation is a priority. Through the Internet, it is possible for learners to access learning materials from the convenience of their homes. However, if the home environment lacks space for studying, or if the equipment needed to access the material is not available or shared, learners may not benefit from this potential flexibility. This is pertinent especially in countries such as Sri Lanka, where the majority of households with computers share the resource, possibly making it difficult for some learners to use it for study purposes. On the other hand, the urban elite who have access to personal laptops and

Internet connections will be better served by online DE technologies. The fact that only 11.4% of households have access to computers (Department of Census and Statistics Sri Lanka 2009a), severely restricts access for potential learners, if digital technologies are used. As a general rule a technology can be considered if at least 70% of the target group have access to it (Bates 2005). Therefore, the target group for a particular programme is a major factor in the decision of adopting a particular technology. On the other hand, the technology infrastructure of a country should also be considered in making such decisions. For example, if the majority are only able to access the Internet through narrowband connectivity, there will be little use of high quality video material as educational content. In fact, a recent technology audit that examined the use of technology by members of a voluntary organization in 145 countries reported that for a number of people downloading a document took a considerable amount of time (Williams, Spiret et al. 2012). ‘Access’ in this framework only considered physical access to technologies; but access to technology, as it is now understood, is not only a matter of physical access (Warschauer 2002; van Dijk and Hacker 2003; van Dijk 2005). This is discussed in Chapter 5.

Costs considered in this framework are the costs involved from the institutions’ perspective in preparing and delivering material. Since the costs involved for an individual can be tied to the issue of access, this perspective could be justified. The cost structure of a particular technology is important; for example, radio broadcasts can be very economical for a large number of students, while web-based learning would not be as economical. On the other hand, for smaller numbers, radio broadcasts are not viable while web-based learning is still economical.

Table 4-2 compares costs per student study hour for different technologies and different numbers of students. Cost per student should not be the only consideration in cost decisions, because there can be hidden costs. In general, any technology that can be used in a similar way to the existing experience is cheaper than approaches that require staff training, which is often an invisible cost, one that is overlooked. There can be auxiliary benefits of technologies too. For example, using web-based learning provides essential digital skills for the learners, which are much valued in employment. Therefore, careful consideration should be given to a cost-benefit analysis.

Table 4-2: Comparison of Cost per Student Study Hour in \$US

No. of students per course (over 8 years)	30	125	625	1250	3000
<i>One-way technologies</i>					
Broadcast TV*	460.00	110.00	22.00	11.00	4.58
Radio*	60.00	14.88	2.97	1.49	0.60
Print (without textbooks)					
Dual Mode	3.01	1.75	1.43	1.39	1.37
Open University	10.64	3.00	1.04	0.79	0.65
<i>Two-way technologies</i>					
Web-based learning	3.85	2.57	2.25	2.21	2.18

*without tutorial costs

Source: adapted from Bates (2005)

Teaching and learning, according to Bates (2005), is a weak determinant of assessing appropriate technology because there are many other factors that influence the effectiveness of a particular technology (Mehlenbacher 2010). For example, hardworking and motivated learners as well as experienced teachers can overcome any shortcomings a technology shows. This complex interplay of factors may have influenced the “no significant difference phenomenon” (Russell 2010) that has been observed in research regarding the effectiveness of technology for teaching and learning. Unfortunately many have interpreted this to “conclude that media and technology do not matter as far as instructional technology is concerned” (Bates 2005, p59). However, the identification of technologies that suit particular learning purposes under specific circumstances is required in making decisions about acquiring technology for DE. This is even more important today because the knowledge economy (KE) has placed more emphasis on a type of learning that facilitates developing skills in the gathering, management and analysis of information, problem solving, and decision making, as opposed to more traditional teaching on comprehension and memory (World Bank 2003b; Bates 2005).

Interactivity and ease of use are also important as distance learning can become a lonely experience and problems encountered with a technology can deter learners. There are two perspectives to interactivity in DE: learners’ interaction with the material and learners’ interaction with others (content creator, tutor, and other learners) (Moore 1989). As argued by Holmberg (2001), DE is an internal didactic conversation between the learner and the material. On the other hand, for feedback, clarification, and discussion of materials, learners require interaction with others; in this sense distance learning can also be seen as a social

activity, which can be supported by technology. A group of people sharing a passion for something they do, and who want to learn by interacting and sharing expertise, is called a 'community of practice' (Wenger and Snyder 2000). Thus, a class of DE students can be considered a community of practice. Even though there are advanced technologies with high potential, unless they are easy to use, learners, especially at a distance, will find it difficult to cope with them. Hence, not only the selection of easy to use technology but also the provision of support services for distance learners is essential.

Organizational issues should be addressed carefully in order to support the meaningful adoption of technology for DE. The successful adoption of technology requires the purchase, installation, and testing of technology, as well as training and some forms of organizational change and leadership. External factors such as the already-established technological infrastructure in a country, government initiatives, or donor pressures can influence decisions on technology selection. On the other hand, internal factors such as resistance to change can also inhibit the uptake of a technology.

Bates (2005) claims that it is easier to secure funding for glamorous and new technology rather than for proven and not-so-new technologies. Although it is generally advisable to use proven technology, sometimes the decisions may be costly in the long term; for example, if print-based DE is relied on instead of web-based programmes, then learners may not gain computer skills that they would have gained if the programmes were web-based. On the other hand, adopting leading-edge technology can bring unforeseen issues. Hence, it is advisable to seek to establish a correct balance between new and proven technologies; this balance sometimes leads to the adoption of only proven technologies, sometimes only new technologies, and sometimes a mix of both, which depends on the specific circumstances. However, from amongst heterogeneous systems with a mix of compatibility, incompatibility, and upgrade potential, finding the correct mix is a complicated decision.

The speed at which new courses can be created and existing courses modified is also an important criterion, because some courses such as biotechnology or computer science may require frequent changes. The criteria presented in the ACTIONS framework provide a basis for informed decisions in selecting suitable technology for ODL.

However, there are situations where the selection of technology is not the decision of the adopter. There have been instances where technology adoption has been prescribed by a funder, similar to the imposition of economic policies on the IMF loan recipients, which was discussed in Chapter 3. For example, Amutabi and Oketch (2003) criticize the AVU as another failed project of the World Bank; Perraton (2000) describes the AVU as a technology-driven project that failed to consider the merits of different technologies for increasing access to education. As the cost of delivering programmes using satellite-broadcasting was exorbitant, in 2002 after the AVU was established as an independent not-for-profit organization, a new operational model was adapted to facilitate access to the Internet using VSAT (Very Small Aperture Terminal), and to use locally hosted non-proprietary Learning Management Systems (LMS). This allowed the AVU to reduce its operational costs and the Internet traffic (Juma 2006). The intention to expand educational opportunities in Africa via the AVU is noble; however, the decision to teach courses bought from elsewhere and the selection of expensive satellite technology drastically reduced the affordability of AVU courses to many Africans, raising issues of the sustainability of the project. For example, the fee for one term at Kenyatta University via the AVU was the equivalent of a full Bachelors degree at the University of Nairobi (Amutabi and Oketch 2003). With an inspiring leadership, the AVU centre in Kenyatta University has managed to generate a profit (Juma 2006); but, most AVU centres in other African countries have faced sustainability issues, especially in Ghana, due to students defaulting on fees (Ayeh 2008). This discussion shows the importance of decisions concerning selection of technology in ODL.

4.4.1 Popular Technologies in Distance Education

The following discussion on popular technologies in DE uses the important points identified in the ACTIONS framework to analyse the potential of each for DE delivery. However, it should also be stressed that the context in which these technologies apply is a major determinant of the appropriateness of a particular technology.

4.4.1.1 Print

Print has been the traditional DE delivery technology. Even today, it still dominates as the teaching ‘technology’ in the forms of printed material and text books (Bates 2005; Belawati

and Baggaley 2010). The accessibility of printed material, its low cost and portability have led to its extensive use in DE. Not requiring a power supply or special device (other than the material itself) is an important reason for the accessibility of print, especially in the developing world. Print is a rich technology that can represent information abstractly and in a thought-provoking way for teaching and learning. However, the meaning of text has to be interpreted by the reader and therefore literacy is a prerequisite. Another major disadvantage of print lies in its preparation process, especially in the case of books. It takes considerable time to design and publish quality print material; hence, modification may be difficult to incorporate. On the other hand, lecture notes and slides distributed to distance students as printed copies may be modified in a short time. Bulk printing is cheap for large volumes of material while photocopying is a cheaper option when fewer copies are needed. Many institutions that provide digital copies of lecture notes and slides tend to rely on students to choose to print their own versions. This inevitably passes a much higher per page printing costs to students.

4.4.1.2 Radio

Radio is a highly accessible technology, even in the developing world. Unlike print, literacy is not a prerequisite and it has been used to deliver basic education and literacy programmes for over 70 years. Latin America, especially Mexico, and Australia use Radio Schools. Reaching poor peasant children is the motive of Mexican Radio Schools, while Australia uses it to reach isolated farmsteads. The Chinese radio and television university system uses a dedicated broadcasting system due to its massive capacity (Perraton 2000). Radio programmes can be made interactive by allowing telephone questions. Using such mechanisms in a developing country has previously been difficult because of the low levels of telephone penetration; nevertheless the recent high mobile phone penetration in those countries encourages this type of radio programme. Alternatively, students can be invited to send in their questions on postcards, to be discussed in the next programme. This is a widely used and highly popular practice in Sri Lanka for radio talk shows. The production of radio programmes takes little time; therefore they are suitable for fast changing fields of study. This technology has a high initial cost for material production; but if sufficient numbers of listeners are available, it can be highly cost effective. However, radio limits the flexibility

for the learner as they have to listen to the broadcast in real time. However, this can be overcome by recording the programme for later use.

4.4.1.3 Television and Video

Video media is exploited for learning and teaching through television, video cassettes, or video conferencing. It is also presented as vodcasts or video files through the web, an area which is discussed under web technology. Although television is not as accessible as radio in the developing world, it still has very high penetration rates even among the poor. For example, in Sri Lanka, 77% of households have access to television (Department of Census and Statistics Sri Lanka 2008a). The OUUK, with its unique partnership with the BBC, used this public broadcasting service for radio as well as educational television broadcasts. The Open University of Hong Kong, the Bangladesh Open University and the Korean National Open University have also used this type of partnership with broadcasters. The AVU uses study centres equipped with satellite receivers where students can watch the satellite broadcast television programmes. In Sri Lanka, the University of Colombo School of Computing uses educational television programmes to help its external students. However, the production of video material is comparatively expensive to that of print and radio, and it also lacks interactivity.

4.4.1.4 Web-based Learning

Web-based learning has received much attention because it enables the use of multiple media for educational delivery. In fact, many people think of web-based learning when the phrases “eLearning” or “ICT-enabled learning” are heard. As seen in Table 4-1, the web can be used to deliver learning material synchronously or asynchronously, and as a one-way or two-way delivery technology. Developed countries with high Internet penetration have used this technology for educational delivery extensively. For example, a growing trend in online learning was observed in the US (Allen and Seaman 2007). It reported a 9.7% growth in online enrolments outnumbering the overall HE growth of 1.5%. Developing countries, such as China, Taiwan, India, and even Sri Lanka are using web-based technologies for HE. However, the lack of infrastructure support and low levels of digital literacy have been consistent themes that have emerged in these contexts (Sharma 2005; Zhang 2005).

Commercially available LMS such as WebCT[®], Blackboard[™] or the Open Source Software Moodle[™] are adopted by many HE institutions to manage content in their web-based courses. Since the late 1990s these have been the standard to replace the earlier use of web pages for posting notices, links and other resources (Siemens and Tittenberger 2009). “[O]ur official culture is striving to force the new media to do the work of the old” (McLuhan 2001, p94); hence the first use of the web was to replicate the work of print. Today, there are more sophisticated uses of the web technology, ranging from online quizzes and simulation programmes to virtual reality (VR) programmes. Bandwidth of connections to support these new types of interactive programmes has been a concern in developed countries while developing countries are worried about the access levels (Bates 2005). The cautious adoption of online learning by the UKOU is a good example for any open learning institute. At the OUSL too, most of the courses are supplementarily online, with less than 5% of optional activities presented online. Conversely, Moore and Kearsley (2005) maintain that quality of the materials are of a greater concern than access (quality of materials will be discussed in further detail later).

In distance education, the issue of Internet access is not the most important issue regarding technology. A far bigger problem is the quality of the media produced for distribution via the technology (Moore and Kearsley 2005, p7).

The production and distribution of simple web-based learning material is cheaper than that of broadcasting and print for small class sizes; however, it does not provide high economies of scale (Table 4-2). In addition, it does have economies of scope as courses can be provided to smaller numbers of students more cost effectively. Content on the web can be changed to include any omissions or to add more recent information much easily than with print. On the other hand, the same flexibility could underestimate the importance of reviewing course materials before presentation using the web, thus validating Moore and Kearsley’s (2005) point about quality. The creation of reusable learning objects has allowed components on one course to be reused in other courses, providing more flexibility. Interaction and communication can be greatly facilitated with the use of web technologies to provide a virtual community for the distant learner, either in text form as discussion forums, or in more sophisticated form as in the virtual world. Web technologies allow access to a plethora of resources for the distant learner. As stated earlier, the Massachusetts Institute of Technology (MIT) has published its lecture notes, exams and videos free of charge to be downloaded by

anyone. These learning materials, as well as learning materials from other institutes, are available on OpenCourseWare, which is a web-based publication of course contents. Movements such as these allow users from all over the globe to access and utilize world class materials free of charge.

However, the adoption of web technology very much depends on the target group. For example, considering the Chinese experience, Zhang (2005) concludes that:

despite all the nice hope to narrow the regional gap through online education, it may on the contrary cause more severe imbalance between urban and rural China, when rich areas benefit from more quality online education while the poor are left behind (Zhang 2005, p29).

This demonstrates the importance of context in technology adoption decisions.

4.4.2 Emerging Technologies

Technology advancement and convergence provide numerous opportunities for innovative practices (Delich, Kelly et al. 2008). The shift in the web from static content of “Web 1.0” to the “Read/Write Web” or the “Web 2.0”, which supports technologies such as Wikis, podcasts, vodcasts, blogs and social networking has changed the users’ role from being a passive recipient to an active content creator. Delich, Kelly et al. (2008, p9) remarks “Web 1.0 was about downloading; Web 2.0 is about uploading”. This change of philosophy allows great potential for knowledge construction, permitting a course to be truly student centred. Some of the emerging technologies of today’s eLearning are discussed in the next section.

4.4.2.1 Digital Storytelling

A digital story could be a blog, audio or a short video narrative that is created using text, video, music, voice and other sounds, and still images. The use of a video camera and software such as iMovie® or MovieMaker allows the creation of a digital story, which extends its reach to a much larger audience. Digital storytelling can potentially be used at all levels of education.

4.4.2.2 Personal Broadcasting

Personal broadcasting is supported by many technologies in “Web 2.0” such as blogs (web logs), vlogs (video logs), moblogs (mobile logs), podcasts, and vodcasts. These are extensively used in HE to provide recorded lectures as well as supplementary materials such

as guest lectures. Blogs can be used to present an individual's knowledge in a subject discipline, especially in computer science and IT, which can also serve the purpose of a detailed CV for potential employers. Blogs are extensively used as a tool to support reflective learning in HE. However, Wheeler (2009) has shown that not all students feel comfortable in using blogs to express themselves.

4.4.2.3 Online Meetings

Software such as Skype™ or Microsoft® LiveMeeting facilitate synchronous meetings over the web. Groups of students working on projects, especially at a distance, or research students in the field, can utilize online meetings to reduce travel costs and time.

4.4.2.4 Wikis

Wiki software is a type of website that permits its visitors to edit the content. This feature of Wiki is ideal for collaborative authoring and often used in HE for group projects and project reports. Siemens and Tittenberger (2009) claim that while blogging aids an individual voice, Wikis promote collectivism. However, the use of collaborative blogging has shown that despite Wikis and blogs having different applications, some functions which are interchangeable (Wheeler 2009).

4.4.2.5 Communities of Practice

This chapter introduced the concept of communities of practice. These are groups with common interests. Communities of practice are not a technology as such, but a practice that can use technology to function. They can operate online as discussion boards or newsgroups and contribute to disseminate knowledge and skills (Delich, Kelly et al. 2008; Wenger, White et al. 2009).

4.4.2.6 Educational Gaming

Presenting learning material through video gaming is a strategic method of reaching learners. Many renowned organizations such as the Nobel Foundation use educational gaming to attract and educate young people. For example, the Nobel Foundation presents a Diabetic Dog game (<http://www.nobelprize.org/educational/medicine/insulin/>), which allows the player to take care of a diabetic dog by feeding, exercising and giving it insulin injections. This game is an effort to teach the Nobel Prize winning concept of insulin and the

importance of maintaining blood sugar levels in a diabetic patient's body. However, Healy (1998) reports that in a mathematics game where children were supposed to answer multiple-choice arithmetic problems to gain bolts of energy to continue the game, they were observed to pick answers at random in order to return to the game quickly. This raises the issue that although educational gaming is a powerful tool it needs to be used appropriately in order to be beneficial.

4.4.2.7 Virtual Reality (VR)

Computer technology can be used to create a three-dimensional, simulated world that allows the user to control and explore its environment with a feeling that s/he is in that world; this is the concept of VR. This concept is used extensively in the entertainment industry especially in virtual worlds, which allow users to be present in an environment through a computer generated character called an "avatar". In 2007, about 100 HE institutes were registered with "Second Life", a popular multi-user virtual environment developed by Linden Labs, marking the use of these environments by educational institutes for learning and teaching (Childs 2007). Second Life as a social networking space is conducive to overcoming some of the barriers tied to DE in building a sense of community (Ritzema and Harris 2008).

4.4.2.8 Augmented Reality (AR)

AR is a hybrid environment, which combines the physical environment with computer-generated sensory input such as sounds or graphics. It is an evolution of VR; but maintains a sense of presence in the physical world as opposed to the total immersion aimed for by VR (Delich, Kelly et al. 2008). It is commonly used in sports telecasting, for image guided surgery, airplane cockpit training and computer generated imaging for structural and engineering designs. However, due to the expensive nature of this technology, the application of AR as an educational tool is limited to a few disciplines such as military, medical and flight training.

4.4.2.9 Mobile Learning

With the increasing ownership of smart phones, mLearning is becoming an everyday activity in many developed countries. For example, nearly 42% of the US mobile subscribers and 44% of mobile users in France, Germany, Italy, Spain, and the UK now own smart phones (ComScore 2012). The Driving Theory Test Game implemented to help people preparing for

the driving theory test was reported to be very popular among UK users (Attewell 2005). On the other hand, in developing countries the use of text messaging-based mLearning allows more people to participate in mLearning, as smart phones are not widely available.

Connectivity

Even though these technologies present wonderful opportunities for enhancing the student learning experience, to function properly many require high speed Internet connectivity. As already argued, in some parts of the world downloading a document can take considerable time due to poor connection speeds (Williams, Spiret et al. 2012); an online discussion via Skype™ with a slow Internet connection is likely to cause frustration to all the parties involved. The ability to use these new technologies for educational purposes by distant students in countries where the Internet infrastructure is poor may take many more years. For example, due to the bandwidth issues, some Sri Lankan universities have restricted access to some Internet sites such as YouTube™ and Facebook. Thus,

[m]ultimedia on the Internet is still not an everyday reality in the same sense as multimedia on CD-ROM or DVD, which may be common place in the home or classroom. Internet connection speeds limit the quality and quantity of what can be transmitted (McGreal and Elliott 2008, p144).

This reiterates the importance of context in selecting technologies for DE.

4.4.3 Quality Issues

In many countries DE has yet to receive equal recognition to conventional education (particularly in HE). With reference to DE in India, Perraton (2000, p68) reports that:

[c]orrespondence education had low status and was used by some universities mainly as a way of raising revenue, with fees for off-campus students cross-subsidising the more favoured students on campus.

Even in Sri Lanka, as already discussed in Chapter 2, DE is considered a “second-class type of education” (Uturupane, Millot et al. 2009, p20) and its quality may be suspect. Therefore quality is of paramount importance in technology-mediated DE. The concept of quality itself is debatable as quality can mean different things to different people.

Garvin (1984) identifies 5 classes of quality definitions:

- Transcendent – considers quality as innate excellence; “it is both absolute and universally recognizable, a mark of uncompromising standards and high achievement” (Garvin 1984, p25).
- Product-based – quality is considered measurable and the product’s attributes are considered the basis for quality measurement.
- User-based – quality is customer satisfaction.
- Manufacturing-based – the degree of compliance to specification is considered quality.
- Value-based – quality is defined in relation to costs; thus good value for money is considered quality.

UNESCO definition for quality in HE is:

[q]uality in higher education is a multi dimensional, multi level, and dynamic concept that relates to the contextual settings of an educational model, to the institutional mission and objectives, as well as to specific standards within a given system, institution, programme or discipline (Vlasceanu, Grunberg et al. 2007, p70)

The “Quality Assurance Toolkit” developed by the Distance Education Modernization Project (DEMP) defines quality as “the fitness for purpose of a product or service according to a set of required standards” (Rama and Hope 2009, p336). There are concerns about whether the same quality assurance mechanisms adapted in conventional educational programmes would be applicable and meaningful in DE settings (World Bank 2002); thus there are quality guidelines developed specifically for DE, and the DEMP’s toolkit is one such effort to facilitate self-assessment by an institution. However, unless external accreditation or monitoring is employed, it is doubtful that quality can be guaranteed. In this regard, Smithers (2011) argues that making all content accessible as open courseware would mitigate the problem of content quality, as all institutions/individuals would take great care to safeguard their reputation by ensuring their product would stand up to public scrutiny.

The increasing use of ICTs presents many opportunities for academic dishonesty, raising issues of quality; for example, today it is much easier to copy another student’s work as the assignments are submitted in electronic format (Adams 2011) or copy and paste information from electronic resources into an essay. Moreover, there are online services that sell essays or even doctoral theses. Conole, de Laat et al. (2006) reported an instance where medical students in a UK university had forged confirmation letters. In view of this, DE students

managing multiple commitments competing for their time could be tempted to use one of these easy solutions although adequate guidance from the educational institute may help avoid this. Therefore, it is important to build awareness about the consequences of such malpractices (Cooke 2007). Today many academic institutes use plagiarism detection software such as TurnitinTM to deter students from academic malpractices.

The next section of the chapter discusses the contemporary situation regarding technology use in Sri Lankan DE.

4.5 Technology Use in Sri Lankan Distance Education

As discussed in Chapter 2, the Sri Lankan government is promoting HE through DE. The government has been setting the context for the use of educational technology to increase and widen access to quality HE through DE, and the DEMP was their main attempt in introducing ICT-enabled DE in Sri Lanka.

4.5.1 Modernising Distance Education

The DEMP marked the dawn of modern technology use in DE in Sri Lanka. This Project, aided by the Asian Development Bank (ADB), commenced in 2003. Through the development/deployment of DE technologies, the DEMP aimed to increase access to post-secondary education in Sri Lanka while improving quality and relevance of learning. The project intended to facilitate online learning for 165,000 external degree (ED) students registered with the state universities, about 40,000 students from at least 15 public and private institutions, students of conventional universities and about 20,000 OUSL students (Loxley, Ho et al. 2003). This capacity was expected to double over the first 5 years of the project and over a period of 18 years this project aims to provide the opportunity of post-secondary education to 1.4 million additional students who lack access to conventional universities due to their limited places.

The DEMP consisted of three components:

- Distance Education Partnership Programme (DEPP)
- Public Private Partnership Programme (PPP)
- The OUSL Capacity Enhancement Programme (OUSL-CE)

The DEPP was responsible for improving DE programme content, quality and distribution. It also included the development of the National Distance Education Network (NDEN), which links the OUSL centres around the island with other public and private post-secondary institutions in order to share resources. Through this national network, online DE programmes are made accessible to students and partner institutes are able to use it to host their online DE programmes. This service is called the National Online Distance Education Service (NODES). The PPP emphasized public-private institutional sharing through matching grants for stipends, sharing of information, participation in standardized accreditation system, providing access to online DE courses and involvement in sharing programmes with overseas universities (Loxley, Ho et al. 2003). The OUSL-CE project aimed to enhance and upgrade the OUSL's facilities and encourage staff development.

Online DE programmes are facilitated by the DEMP and the general public is able to access these courses through telecentre facilities (called NACs), which are also funded by the DEMP. An island-wide network of NACs (NODES Access Centres) and affiliated facilities in schools make access convenient for distance learners registered in these online courses (Distance Education Modernization Project n.d).

4.5.1.1 Online Distance Education

The NODES supplies online courses to students. However it is worth recalling that only 11.4% of the households in Sri Lanka own computers (Department of Census and Statistics Sri Lanka 2009a), and only 0.7% households have Internet connectivity (Department of Census and Statistics Sri Lanka 2004). According to Bates (2005), access and cost are the most important factors to be considered in selecting a technology for DE. He argues further that:

in developing countries, many of the technologies, for instance, the Internet, will be beyond the reach of most of the target group for distance education for many years to come (Bates 2005, p3).

The statistics above on Internet access in Sri Lanka confirm this.

4.5.1.2 Access to Online Distance Education

Although high speed 3G Mobile Broadband, ADSL (2MB) and ISDN (64Kbps) Internet access is available in major cities and their conurbations, their high cost prevents wide

uptake (Gunawardene and Wattedegama 2003). As discussed earlier, the bandwidth provided by most telecommunication providers for dial-up connections to the Internet is not adequate to access real time video or audio. Therefore, even though the material is prepared and in place, learners may not be able to access it from their homes in present conditions. The telecentres are expected to provide the general public with affordable Internet access. 26 NACs were established under the DEMP; there are about 633 Nanasala (*Nana* meaning knowledge) centres at the moment (Nanasala n.d.), which provide the general public with access to computers. “Sarvodaya”, an NGO, also owns about 30 telecentres in rural Sri Lanka; all these facilities together with Internet-cafes can be used by the public to access materials over the Internet.

However, distance learners face problems in utilizing NAC facilities for their studies. DE is generally utilized by individuals with commitments that do not allow involvement in conventional study programmes. Attending a NAC during working hours is difficult if not impossible for working students; so “NACs operate on all seven days, around 8-12 hours per day depending on the demand” (Liyanage 2010, p2618). But, even if one manages to spare time to attend a NAC, because there are only 26 NACs around the country it may involve a round-trip journey that could take hours. As there are fewer buses on rural routes, especially on weekends, and heavy traffic on Colombo roads, users both in rural areas and in Colombo will be affected with a logistics problem. In some NACs where there is heavy utilization, access to computers is allowed under a quota system. This allocation may not be enough for an individual who is taking up several subjects to surf the web to find information, compile it for reports with formatting, and to submit as course work (where there are assignments to be submitted). Thus it can be seen that solely depending on a NAC is a challenge for a distance learner.

On these grounds, the decision to utilize online learning to cater for school leavers is questionable. Conversely, NODES provides services to the Postgraduate Institute of Medicine for its newly introduced DE courses (DeSilva 2008). This is a wise decision as the target audience of this programme consists of general practitioners who are able to access the course through the Internet from home or from the office.

Another major concern regarding NACs is their sustainability. Some of the centres were established as early as 2007 and computers in these centres will soon need replacing. At the proposal stage, it was hoped that the online courses offered by NODES would be self-sustainable at the end of the project by attracting sufficient students.

The costs and benefits of the new technologies will rise as users increase, spreading the flow of information to a wider audience at *reasonable cost* [emphasis added] (Loxley, Ho et al. 2003, p19).

However, the uptake of online DE fell far short of numbers expected to sustain the system, and the fees charged to students for the service is not as high as the initial expectation. For example, at the proposal stage of the DEMP:

[t]he net result of the analysis indicates that with as few as 10,000 students on-line and paying user fees of \$100 per year, the DEPP can continue existing operations until the end of 2008. However, with an additional 10,000 students on-line per year and paying the same user fees, the DEPP will have sufficient funds to continue expanding curriculum development through migrating programs to the web and additional upgrading of existing software and hardware (Loxley, Ho et al. 2003, p59).

It is worthwhile noting that \$100 is roughly equivalent to Rs.11,300, which is a considerable amount of money for a Sri Lankan. Thus authorities of the OUSL had negotiated the lower fee chargeable to an OUSL student accessing NAC, as the OUSL is the only option for poor students who are unable to pay high fees charged elsewhere for HE. Therefore, an OUSL student pays about Rs.500 to access NAC facility whereas a Bachelor of Information Technology (BIT) student from UoM is charged about Rs.15,000 (Personal Communication with Anonymous 2010). However, it should also be mentioned that the BIT course offered by UoM is a solely online course, whereas most of the OUSL online courses are supplementary.

If research had been conducted into the amount of money students could afford for accessing online courses through NACs, it might have resulted in a more realistic estimation of the DEMP's cash flow calculations. Expecting a student to pay Rs.11,300 a year for NAC facility is unrealistic, as a student could get connected via a broadband connection for the same amount or less from the convenience of their own home (provided that the area is covered by an Internet service provider and the student has a computer). For example, Mobitel mobile broadband service offers several packages for monthly subscriptions ranging from Rs.240 (1GB) to Rs.1,290 (8GB), with a connection fee of Rs.250 and a refundable

deposit of maximum Rs.2,000 (Mobitel n.d). Even when taxes and extra usage charges are included it could still be cheaper to use such a connection than using a NAC, when considering the convenience, fee, time and logistics.

As the project had progressed with an unrealistic expectation for cost recovery and sustainability, the government will have to subsidize the costs in order to use the available facilities and to maintain NACs. In addition to the repayment of a 32-year loan, the project incurs maintenance and upgrading costs that will also have to be borne by Sri Lankan tax payers. Even though the project has created a considerable debt for the general public of Sri Lanka, it has developed an online DE infrastructure in the country and has helped students to gain access to the Internet in rural areas. It has also introduced online learning to communities who would not have experienced it otherwise.

There are several similarities that could be observed with the case of the DEMP and the AVU. Both were technology-driven projects in developing countries; but unlike the AVU where the project was initiated by the funder, the DEMP was proposed by the host government. Both projects have extended educational opportunities but at a great cost; they were also overly optimistic on cost-recovery targets and now face sustainability issues. Both these cases show that technology adoption decisions for DE in developing countries have progressed without proper cost-benefit analysis, incurring huge investments of little or no use (considering the amount of debt repayment), for the general public.

4.6 Conclusion

It is argued that today's learners require more flexible options for learning and that learning is becoming a lifelong process. The use of new technology in distance education permits many functions such as flexibility, convenience and building of a learning community. Selecting the appropriate technology requires careful analysis of many parameters, such as those defined by ACTIONS framework. Overlooking context in technology adaptation decisions has caused some projects to fail after costly implementations. The extensive use of technology also raises issues of quality as it presents more opportunities for plagiarism and other forms of academic dishonesty. The government of Sri Lanka is relying on online distance education to increase access to quality higher education and has invested heavily in improving distance education technologies; the Distance Education Modernization Project is

a result of this effort. The uptake of these online distance education programmes falls far short of what was expected; thus the sustainability of the project is at stake.

5 The Digital Divide

5.1 Introduction

The global knowledge economy (KE) as discussed in Chapter 3, favours a class of highly-skilled, flexible and adaptable workers for whom higher education (HE) has become a prerequisite. The change of demographics in HE has increased the need for flexible delivery. This has made technology-mediated distance education (DE), as discussed in Chapter 4, a good option. The spread of ICTs has provided significant opportunities for individuals in terms of life chances ranging from education, health care, social welfare, justice, civic engagement and entertainment. However, if an individual or a nation is unable to develop the potential of digital technologies, they are likely to be marginalized. Chapter 3 discussed inequalities with respect to power, income and wealth. Here, the discussion concentrates on inequalities observed in relation to digital technologies. It introduces the concept of the digital divide (DD) and discusses the contemporary conception of the DD, drawing attention to digital literacies. It then presents the consequences of digital inequality and briefly discusses bridging the divide.

5.2 The Digital Divide

The concept of the DD initially referred to the gap or the difference between people who have ‘access’ to computers and the Internet and those who do not. In fact, it is argued that the “digital divide is first and foremost a question of access to infrastructures” (UNESCO 2005, p29). This early conception of the DD, a deficiency of material access to some groups, could be overcome by ensuring universal access to computers and the Internet. When a technology is first introduced the cost of acquiring it is high. With time the cost of acquiring technology generally reduces (patent royalties may end, thus significantly reducing the cost of technology) and many people who were unable to afford it earlier are then able to acquire it, thus closing the DD. However, this view of the DD assumes that the technology changes will not create further divisions. For example, when ‘have nots’ start acquiring narrowband Internet connections, the technology has allowed ‘haves’ to enjoy broadband connectivity; when old hardware configurations are sold cheaply, new software requires more processing power, more memory and is not always compatible with the older versions of hardware.

Moreover, when narrowband Internet connections are affordable, newer websites use more interactivity, animations, videos, and high resolution pictures that require a large volume of data transfers. This shows that the DD is a dynamic phenomenon (van Dijk and Hacker 2003).

Earlier research on the DD has considered technology or media access and physical access to be the same (van Dijk 2006). This earlier conception of the DD as a sole material deficiency is now challenged. For example, an experiment was conducted in two poor slum neighbourhoods in India by making personal computers accessible so that the people in that neighbourhood could explore and experiment with them at their convenience. These computers were set up as outdoor kiosks, which could be accessed from outside the boundary wall, thus they are often referred to as “the hole-in-the-wall experiment”. This experiment allowed minimally invasive learning and was reported to be highly successful in educating children in computer skills (Mitra 1999). But after his observations at “the hole-in-the-wall” experiment sites, Warschauer (2002; 2003) argues that the minimally invasive learning that was earlier reported to be successful was not useful unless special educational aid or content was available for the users. Another such example is Ennis, the winning town of the Ireland’s Information Age Town competition in 1997. This small town won 15 million Irish pounds to implement its proposal to promote the use of ICTs among its people and small businesses and to promote digital inclusion. 1/15th of the prize money won by Ennis was awarded to each of the three runner-up towns in the competition. However, after the implementation of the award-winning proposal, the town had little to demonstrate as its success. It had introduced the state of art technologies but lacked the necessary preparation to raise awareness in people as to why it was done. Even with few resources, by carefully planning their strategy, other towns have successfully promoted social inclusion using technology better than the winning town (Warschauer 2003). Thus, it is evident that providing physical or material access in itself would not bridge the divide. According to Warschauer (2003):

meaningful access to ICT comprises far more than merely providing computer and internet connections. Access to ICT is embedded in a complex array of factors encompassing physical, digital, human and social resources and relationships. Content and language, literacy and education, and community and institutional structures must all be taken into account if meaningful access to new technologies to be provided (Warschauer 2003, p6).

Many research studies (Hoffman and Novak 1998; Hess and Leal 2001; Carroll, Rivara et al. 2005) on the DD report disparities between physical access to computers and other digital technologies among members of different demographic categories such as income, education, age, sex, and ethnicity. Growing gaps in physical access were seen in the 1990s among people with high and low incomes, education and majority ethnicity compared to the minorities; these gaps started to close in the developed countries but it kept widening in developing countries (van Dijk 2005; 2006). The number of Internet users/ personal computer users per 100 population provides a general idea of the level of physical accessibility for people in a particular country. The United Nations Statistics Division (United Nations Statistics Division 2010) revealed that there was a stark contrast between developed countries and developing countries with regard to the number of Internet users. For example, in the UK the number of Internet users grew from 1.9% in 1995 to 76.24% in 2008; while during the same period many African countries including Niger, Ethiopia and Burundi were only able to increase Internet access to less than 1% of the population. Some countries in Asia such as Bangladesh (0.35%), Myanmar (0.22%) and Cambodia (0.51%) too have very low Internet penetration rates. Therefore, it can be seen that “the majority of the population of the planet is [still] on the other side of the digital divide” (Castells 2004, p11). Analysis of the latest ICT development index has shown that the DD was increasing within the countries that ranked low in this index (International Telecommunication Union 2010). In an attempt to identify the causes of disparities in terms of personal computers and Internet penetration between countries, Chinn and Fairlie (2006) examined the relevant data for a group of 161 countries over the period 1999-2001. They concluded that:

[t]he global digital divide is mainly - but by no means entirely - accounted for by income differentials (Chinn and Fairlie 2006, p16).

Their analysis also revealed that telephone density and regulatory quality were of secondary importance for computer penetration. For Internet penetration, regulatory quality was more important than telephone density. Chinn and Fairlie (2006) also investigated the importance of human capital for personal computer and for Internet penetration; they reported that an increase in average schooling by a year was linked to one percentage point increase in the personal computer penetration. The DD exists not only between countries but also within countries among different communities such as urban-rural or ethnic majority-minority (Jurich 2000).

Viewing physical resources as the primary cause for the DD is now dated (Norris 2001; Warschauer 2003; van Dijk 2005; Anderson 2010). Contemporary research has progressed to identifying other causes of the DD to challenge the original term “digital divide”.

5.3 Digital Divide to Digital Inequality

The term “digital divide” is deceptive; it portrays a technological determinism to the divide (van Dijk 2005). Scholars have warned against misconceptions that are likely due to the use of this term as it paints a bipolar division of a more complex dynamic phenomenon, which surfaces in many shades between the two poles. (van Dijk and Hacker 2003; Warschauer 2003; van Dijk 2005). For example, van Dijk argues that the term “digital divide” provides the impression that: it is a simple division between two clearly demarcated groups with a wide gap between them; this gap is not easy to bridge; this division is about absolute inequalities between people who are included and excluded; and that it is a static condition (van Dijk 2006). Warschauer (2003) too has concerns over the term “digital divide”. He observes that the original emphasis placed on physical or material access to computers and connectivity was difficult to overcome in people’s minds; further he too is concerned about the term’s suggestion of a binary division in society. On the other hand, DiMaggio and Hargittai (2001; DiMaggio, Hargittai et al. 2004) observing the changes in Internet access over the years, report that a dichotomous view of the DD was natural and appropriate at a time where a new technology was just beginning to diffuse. They observe that the phenomenon has both technical and social dimensions. They argue that as technology diffuses, usage access becomes more profound. This argument is supported by further research (van Dijk and Hacker 2003; van Dijk 2005). However, as mentioned earlier, it is difficult to erase the original meaning of the DD that attached great importance to physical resource availability rather than to the issues of language, content, the ability to use digital resources or community and social support (Warschauer 2003).

Two levels of differences within the DD were identified by Attewell (2001); first the access gap due to material deficiency and second the usage gap. He argues that the access gap that widened during the period 1994 to 2000 in the US between black and white population groups, was driven by other factors such as income inequality and/or educational inequality rather than ethnic differences. He envisions that if Internet access and computer ownership increases at the rate it was increasing then, the DD would shift to the bottom 20% of the

income distribution, already disadvantaged economically and educationally. He argues that the second level DD was being obscured by some statistics, which merely check the frequency of computer/Internet use. He points out that not all computer/Internet users gain the same level of educational benefit from it. According to Attewell, the second DD relates to the “social differences in the ways computers are used at school and at home” (Attewell 2001, p253). He suggests that it is more likely that poor pupils use computers at home for playing games with minimal adult supervision, whereas pupils from affluent families thrive using educational content with more adult involvement at home.

Thus,

[i]t is therefore naive to expect the provision of computers to reduce educational differences among children in any simple or automatic way. On the contrary, computers may, at least initially, exacerbate existing educational differences between social classes (Attewell 2001, p257).

Natriello (2001) also argues that committing resources in order to bridge the access divide might provide a quick solution to the more visible problem, but in essence would intensify the less visible disparity between usage differences. Today the DD is seen as more complex than simply concerning access and use. Warschauer (2003, p7) argued that the DD framework was a “poor roadmap for using technology to promote social development” because of its over-emphasis on the availability of physical resources. Further he asserts:

[w]hat is at stake is not access to ICT in the narrow sense of having a computer on the premises but rather access in a much wider sense of being able to use ICT for personally or socially meaningful ends (Warschauer 2003, p32).

He proposes an alternative framework, which is at the intersection of ICT and social inclusion - the extent to which people are able to fully participate in the society and take control of their futures (Warschauer 2003). He argues that access to ICTs and the promotion of social inclusion engages a range of resources:

- Physical resources – computers and telecommunication services and the access to use them
- Digital resources – the availability of online digital materials
- Human resources – literacy and education
- Social resources – community, institutional and social support that promotes access to ICTs (Figure 5-1).

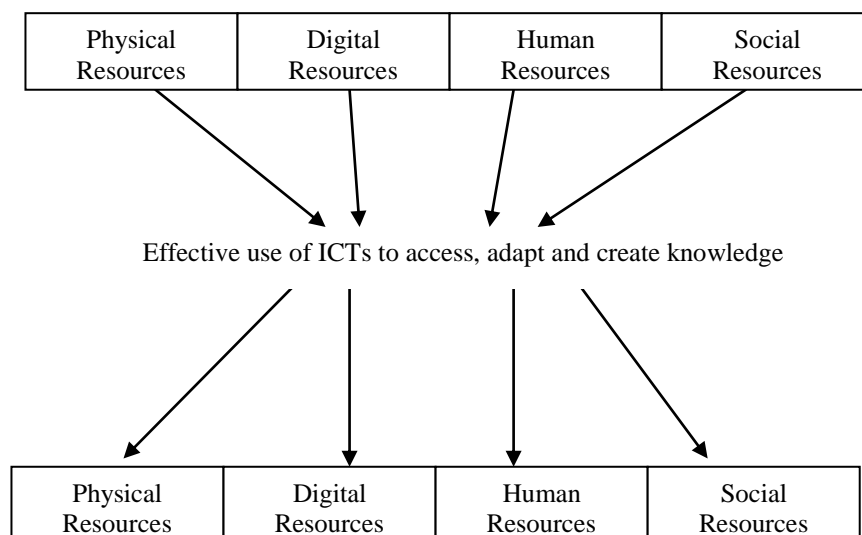


Figure 5-1: Resources Contributing to ICT (Source: Warschauer 2003, p47)

Further he states that:

each resource is a *contributor* to effective use of ICT, presence of these resources helps ensure that ICT can be well used and exploited. Each resource is a *result* of effective use of ICT, by using ICT well we can help extend and promote these resources. If handled well, these resources can thus serve as a virtual circle that promotes social development and inclusion. If handled poorly, these elements can serve as a vicious cycle of underdevelopment and exclusion (Warschauer 2003, p47) [original emphasis].

From the above discussion it is clear that the DD is more than simply a material deficiency and that it needs to be properly addressed to stop the creation of a vicious cycle of exclusion.

5.3.1 Physical Resources

As discussed earlier, in order to make physical resources more accessible it is necessary to increase the affordability of computers and expand the telecommunication infrastructure to extend and increase the affordability of telecommunications. In some instances, establishing public access points also helps to make physical resources more accessible. It is worthwhile noting efforts by different countries to make computers more affordable to its people; for example, India's introduction of Simputer – a low cost and portable alternative to a personal computer (Berman 2008), Aakash – a low cost tablet computer and the initiative One Laptop per Child (OLPC) – a low-cost, low-power laptop with connectivity for children in the developing world. Proposals to redistribute obsolete computers from developed countries to

developing countries in an effort to provide material access for the poor (UNESCO 2005) were vehemently opposed by academics in those developing countries. For example, Fuchs and Horak (2008) argue that such initiatives would limit developing countries' access to new technologies as well as creating environmental problems. As discussed in Chapter 3, today knowledge depreciates at a higher rate than ever before; if developing countries are confined to obsolete technology, it will hinder their ability to be competitive in the global KE.

In Sri Lanka, as discussed in Chapter 4, NGOs such as “Sarvodaya” have established telecentres in rural areas. Under the e-Sri Lanka initiative, the government is also in the process of establishing 1000 telecentres (Nanasala) around the country. These initiatives are important because there is a stark contrast between access to physical resources in rural and urban Sri Lanka. For example, in 2009, computer ownership in Sri Lanka was 11.4%, but 26.3% in urban areas, 9.8% in rural areas and 3.3% in estate areas (Department of Census and Statistics Sri Lanka 2009a).

5.3.2 Digital Resources

In considering digital resources, content and language are of great importance. For example, content for economic development, health care, educational opportunities, commercial affairs, and content for the disabled could be made available through ICTs. Language on the other hand, is a complex and highly significant issue related to content and also to ICT and social inclusion. A recent survey on telecentre usage in Sri Lanka has revealed that the majority of respondents were not benefiting from the Internet or email services because they were not able to understand English (Gamage and Halpin 2007). This issue is highly significant because unequal access to learning English generally overlaps with other social inequalities (Warschauer 2003); for instance, in Sri Lanka geographic location (urban-rural division) has an impact on the resources available for learning English. Thus:

[w]ith knowledge of English a requirement for access to many professions and university programs, English becomes one more barrier to equal opportunity for the poor (Warschauer 2003, p96).

In fact, in Sri Lanka higher educational opportunities in certain disciplines exist only in the English medium, making English another barrier for students who are educated in local languages.

5.3.3 Social Resources

Social resources in Warschauer's (2003) model include the support given by communities, institutions and appropriate societal structures for extending ICT access to all. The needs of communities must be accommodated by the selected technology in order for that technology to be of use to the community. For example, the Kothmale Community Radio Internet Project in Sri Lanka is a highly successful project that broadcasts on FM frequency and distributes information available on the Internet to those who have no access to it (Jayaweera 2001). There are two modes of providing access to such information through this project: one can use the access centre to search the Internet, or alternatively post the question on a postcard to the radio station where the Internet will be searched, and answers will be broadcast on radio.

5.3.4 Human Resources

Education and literacy are important contributors at the individual level for human resources. Literacy or the ability to read, write and think is crucial to be able to use the Internet while education helps an individual to determine how to use and benefit from the Internet (Warschauer 2003).

5.3.4.1 New Meaning(s) to Literacy?

ICTs have brought new meanings to literacy (Anderson 2010). Traditionally as it was a print-dominated culture, a person able to read and write was considered 'literate' (Rassool 1999). Universal Primary Education was then sought to help development and was advocated by the United Nations' agencies; yet there are many developing countries struggling to provide basic education for their people. As discussed previously in Chapter 3, the nature of work in the KE is demanding more than basic literacy from workers. The terms 'technological literacy', 'computer literacy', 'IT literacy' and 'ICT literacy' were used to demonstrate the new literacy needs, but with little agreement on their meanings. In fact, some scholars preferred 'literacies' to indicate the plurality of the concept (Bawden 2001; Lankshear and Knobel 2008; Gillen and Barton 2009; Anderson 2010). Computer literacy and digital literacy are used interchangeably by some scholars, such as Buckingham (2006) and they are often not clearly defined. The Sri Lankan government conducted a pilot study in

2004 to estimate the computer literacy of the country. This survey considered one to be computer literate:

if he/she could do something on his/her own using a computer. For example, if a child of 5 years old could play a game using a computer on his/her own, he/she was considered as computer literate (Satharasinghe 2004).

Satharasinghe (2004) offered justification for this definition of computer literacy, arguing that using a definition of computer literacy from a developed country, where computer usage is much higher, does not suit Sri Lanka. This very basic ability to use computers is neither sufficient for knowledge work (which includes searching, filtering and assimilating knowledge from multiple sources), nor for participation in daily activities (such as online shopping, banking and social networking). Only 20.3% reached even this very basic level in 2009 according to the Department of Census and Statistics Sri Lanka (Department of Census and Statistics Sri Lanka 2009a).

IT literacy can be defined as:

the set of intellectual capabilities, knowledge and skills needed to use information technology at a level appropriate to a person's position, work environment and discipline and the ability to continue to develop them into the future (Winship 2001, p14).

On the other hand, digital literacy was thought to be a: foundational knowledge or capability; cultural entitlement; method of communication; socially and culturally situated practice; a form of self-transformation (Beetham, McGill et al. 2009). The DigEuLit project has developed the following definition of digital literacy.

Digital Literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process (Martin and Grudziecki 2006, p255).

This has three stages of digital literacy development:

- Level 1 : Digital Competence – includes attitude, awareness and skills
- Level 2: Digital Usage – the application of digital competence
- Level 3: Digital Transformation – the innovation and creativity enabled by digital usages

Anderson (2010, p27) illustrates digital literacy as follows:

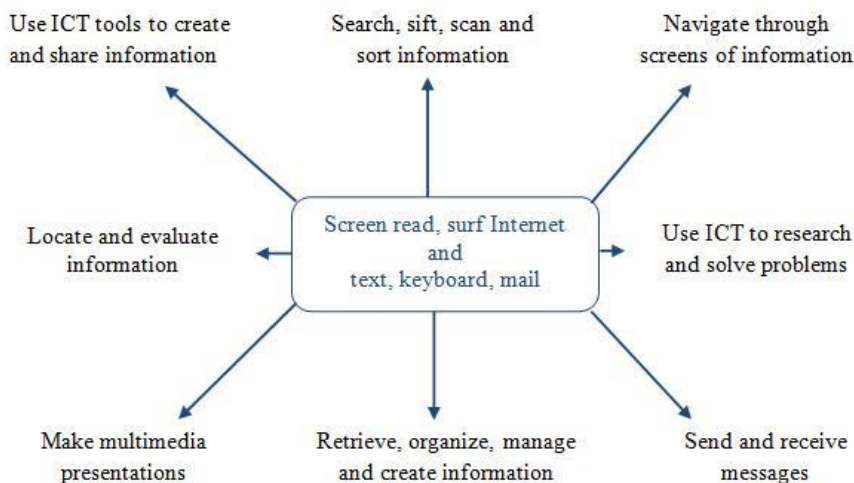


Figure 5-2: Digital Literacies Include Ability to ...

(Source: Adapted from Anderson 2010)

Online safety is another context where the notion of digital literacy has recently gained prominence (Buckingham 2006). Thus it can be seen that becoming digitally literate involves more than merely learning basic skills in order to use a computer or the Internet. However, in order to become digitally literate one needs access to computers and the Internet.

5.3.5 Successive Stages of Access

There are other models proposed to conceptualize the DD. According to van Dijk (2006, p226):

[d]ifferences in physical access are related to a distribution of resources (temporal, mental, material, social and cultural) that in turn can be accounted for by ascribed categories such as age, sex, intelligence, personality and ability and positions in society (labour, education and household position). The main consequence of the digital divide, defined in this way, is more or less participation in the most relevant fields of society (economy, politics, culture, spatial mobility, social institutions, social networks and communities).

Van Dijk (2006) shows that there are ten types of inequalities suggested by social-scientific and economic literature that can be categorized under the headings technological, immaterial, material, social and educational as shown in Table 5-1. He argues that all these forms were visible in the DD.

Table 5-1: Inequalities Observed in Social-Scientific and Economic Literature

Technological	Technological opportunities
Immaterial	Life chances, Freedom
Material	Capital (economic, social, cultural), Resources
Social	Positions, Power, Participation
Educational	Capabilities, Skills

Still the most common type of inequality observed in the DD research is technological opportunity; contemporary research on the DD increasingly focuses on skills and capabilities for utilizing ICTs.

“Access” is an indispensable element in the DD debate. However, the word “access” is used to give a variety of meanings in different circumstances; for example, simple tangible physical access to computers and technology or more conceptual intangible motivational access to computers and technology. Warschauer (2003) described a model of access based on: devices – ownership of (or the facility to access) computers or other ICT devices; conduits – access to ongoing connections that provides services on a regular basis such as electricity, telephone or Internet connectivity; and literacy – “the skills needed for functioning effectively in society” (Warschauer 2003, p41).

Van Dijk (2005) proposed the four successive stage model of access: motivational access; material access; skills access; and usage access to conceptualize the DD. He argues that each stage of access depends on the successful acquisition of the previous stage. Although a significant contribution to the DD debate, some reservations are discussed later in this section.

In this model, illustrated in Figure 5-3, material access is to be obtained after motivational access; it is preceded by skills and usage access. Motivational access refers to an individual’s motivation to use digital technology and it is the first level of access. Material or physical access is the possession of computers and connectivity to the Internet or being granted permission to use them. The possession of digital skills, which can be categorized under operational skills, informational skills, and strategic skills are essential in order to reach the third stage (skills access). Usage access is the final stage, which allows the user to apply technology for a specific purpose. For each new technological innovation this process of successive stages of access repeats in order for the technology to be fully acquired.

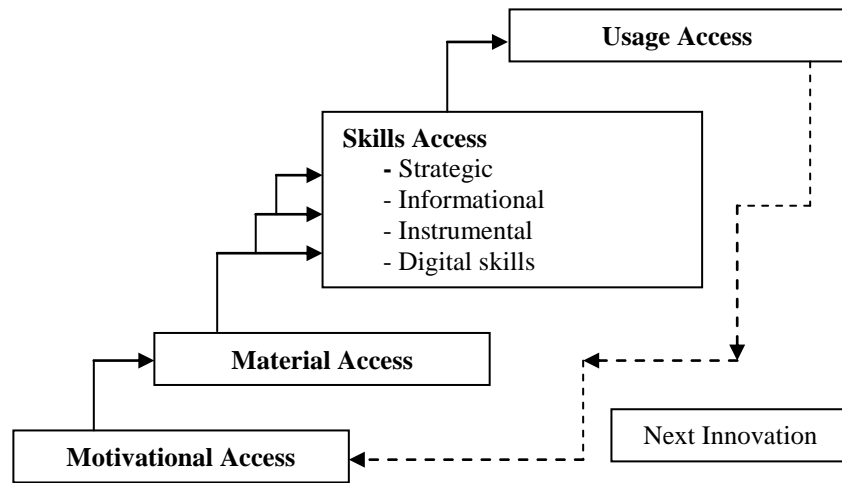


Figure 5-3: A Model of Successive Kinds of Access
(Source: van Dijk 2005, p22)

With motivational access, van Dijk (2005) differentiates between “have-nots” and “want-nots”. The people who would not want to utilize resources even when required material or physical access was available are called “want-nots”. To him,

motivation is the initial condition of the whole process of new media access and appropriation of the technology concerned. Motivation partly explains why subsequent kinds of access are reached or not (van Dijk 2005, p43).

According to van Dijk, the lack of motivational access is not to be blamed on the individual, but on technology itself for lacking qualities such as user-friendliness, attractiveness and affordability. For example, even today, many error messages appearing on computer screens are difficult for non-technical users to understand, which shows the lack of user-friendliness in computer software. Material access can be observed with a resource-based view, with respect to temporal, material, mental, and social resources (van Dijk 2005). For example, a person retired or unemployed who has plenty of time as a resource, may lack material resources such as computer hardware and software. Skills in this model comprise three types of skills:

- Operational skills – skills required to operate a computer, networks, hardware and software
- Information skills – ability to search, select, filter and process information from computer and network sources.

- Strategic skills – ability to accomplish goals and to improve one’s position in society through using digital resources (van Dijk 2005).

Even after operational skills are acquired, users struggle to cope with the amount of information at their disposal, especially searching for information on the Internet. To filter out timely, relevant and useful information for the required purpose, one’s level of education provides an immense support. The amount of time an individual spends on selecting useful information may vary drastically according to ability and experience. Indeed, van Dijk states that:

inequalities of skills access are even bigger than the differences of material or physical access (van Dijk 2005, p92).

The last stage is usage access that guarantees the full appropriation of digital media. However, it was observed that even when some users have motivation, material, and skills they do not utilize digital technologies because they do not have the need (DiMaggio and Hargittai 2001), occasion, or time to use them. Van Dijk (2005) observed that usage differed with the possession of resources (e.g. broadband access versus narrowband access), positional categories (e.g. labour market position, educational position), and personal categories (e.g. intelligence, personality, health). Thus, he concluded that digital technologies benefited the people who already possessed a large number of resources. He compared this with the Gospel of Matthew: “For everyone who has, more shall be given” or the “Matthew Effect” (Merton 1968 cited in van Dijk 2005), which showed that already advantaged groups benefited more from the introduction of new resources than their counterparts. This corroborated the finding of other researchers such as Norris (2001). Van Dijk further argues that the access problems of digital technology will shift from the first two stages to the last two. His analysis shows that the last two stages of access are more complicated to ascend and hence van Dijk exclaims: “*the digital divide is deepening where it has stopped widening*” [original emphasis] (van Dijk 2005, p2).

Although van Dijk’s approach is unique in modelling the stages of access required to gain full appropriation of a technology, it has yet to be completely tested with empirical data. Due to the complexity of the influencing factors, the testing of this model would indeed be a challenge. However, the model only concentrates on the forward direction on acquiring accesses for a given technology. But there can be a situation where an individual placed at a higher stage of access is transferred to a lower stage. For example, if one is at the usage

access stage (final stage) and suddenly due to positional change (for example, a change in the labour market position by being made redundant), then loses physical access to computers and the Internet, placing one at the motivational access stage according to the model is problematic as one has already acquired and still possesses the skills. This type of scenario is widely observed in Sri Lanka where not many households own computers; pupils are able to use them at schools; as soon as they graduate from school they lose access to computers. Nevertheless, with his detailed analysis on access, van Dijk (2005) presents strong arguments regarding the deepening divide.

5.4 Consequences of Digital Inequality

Digital inequality severely constrains people's participation in everyday activities/services such as: education, the labour market, politics, social relationships, culture, social services and health care (van Dijk 2005). This has worsened

[a]s more forms of communication, social networking, community organizations, and political debate and decision making gravitate to online media, those without access to the technology will be shut out of opportunities to practice their full citizenship (Warschauer 2003, p28).

For example, job vacancies that used to be advertised in newspapers are now appearing only on the web and in many instances applications may only be made online; unless one has access to this information and possesses the skills to apply online one would be at a great disadvantage.

5.4.1 Education

Education is considered to provide a gateway to opportunities, especially for people in developing countries. In a KE timely information and knowledge is of paramount importance for success. Digital technologies are able to provide just that, and not having access to such resources will have adverse effects on knowledge acquisition. In the developed world for HE as well as for basic education ICTs are heavily used. Even though pupils are able to access digital resources at school these resources are mostly shared. Pupils who have computers and Internet connectivity at home are likely to enjoy more time experimenting and developing important skills such as information finding and filtering skills that are vital in later life. In HE and research the use of computers and the Internet is most profound. Further, with advanced educational technologies students are able to access

world-class education through distance educational means if they are equipped with appropriate skills and connectivity. Thus, not possessing digital resources or the skills for using them, limits the chances for education and in the long-term for succeeding in life.

5.4.2 Labour Market Position

As discussed in Chapter 3, today the economy favours knowledge workers. To become a knowledge worker and to remain competitive in the labour market HE is a prerequisite and continued learning and upgrading of knowledge and skills is essential. Digital technologies facilitate DE; an ideal option for employed learners. At the same time, the Internet presents a plethora of resources to all who have access to it; but only the skilled who are able to locate the required information are able to perform their jobs effectively and efficiently (Hargittai 2008).

5.4.3 Politics

Today many countries use eGovernment services; these are intended to provide convenience and transparency, and to increase citizens' involvement. Communication technologies such as discussion boards and emails are good methods of gathering public opinions and views. However, Norris (2001, p22) cautions that digital politics would “engage the engaged”. People can protest, create petitions, and contact authorities at a minimal cost by using computers and the Internet. Also, by accessing government websites it is possible to claim benefits or gather information conveniently. For example, the Information Communication Technology Agency in Sri Lanka has established a Government Information Centre – a telephone service and a website to provide information regarding government services; the telephone service has become very popular among the public, conversely the website is not so popular. It could be speculated that it is because the telephone service is more accessible that it has become more popular. The number of calls received by the centre provides evidence of this: 30,368 calls in English, 37,722 in Tamil and 850,799 in Sinhala (Information and Communication Technology Agency of Sri Lanka 2009).

5.4.4 Health

Information on new and more effective forms of treating diseases, medications and prevention methods are available to people who are able to access information from some of

the world's leading health research institutions. This information could be used to stop epidemics spreading. For example, the 2011 outbreak of E-Coli in Germany could have been much worse were it not for the public awareness created by new media; these, especially social media such as Facebook and Twitter, are also used in crisis management and disaster recovery efforts as a public relations and communication tool (Muralidharan, Rasmussen et al. 2011).

As discussed in Chapter 3 increasing inequality within countries and between countries is likely to disturb the world order in the form of extremist movements. Thus, the divide introduced by technologies to distant parts of the world also has a bearing on the global whole.

5.5 Bridging the Divide

As digital technologies are able to accelerate productivity, developed countries that are at the forefront of technological innovation have an edge over the other countries (Castells 2000b; Norris 2001), and are likely to maintain their position for the foreseeable future. As discussed in Chapter 3, in today's networked society being or not being part of the network determines the chances available for an individual, organization or even a country (Castells 1999b), thus being left out either due to infrastructural issues or the inability to use new technologies (or for any other reason) will reduce the chances; thus it is vital to overcome digital inequality. In the EU, a digital inclusion campaign has gained wider attention and many projects are underway to include differently-abled, the elderly, migrants, minorities and other such groups (European Commission 2008).

However, there is no easy solution to the problem, as it is deeply rooted and is strongly associated with economic inequalities (Norris 2001; Chinn and Fairlie 2006). This underlines the importance of economic inequality being addressed in order to bridge the DD within and between countries. Conversely bridging economic inequality in itself is not likely to solve the problem of digital inequality; peoples' attitude towards technology and skills needed to use technology will also have to be addressed. Observing the developing world's problem of the DD, van Dijk (2005, p205) concludes that:

strong emphasis on public access, addressing motivational and usage access awareness programmes and the creation of practical local applications and cultural content are the

prime objectives of local governments and of international agencies conducting development work.

This shows the importance of policy initiatives in bridging the DD.

5.6 Conclusion

The Digital Divide is not a mere material deficiency, although it is strongly associated with economic inequality; it has a presence in many other forms and is more meaningfully termed ‘digital inequality’. There are many adverse consequences of digital inequality, which include reducing people’s chances of participation in education, politics, the labour market and civic activity, as well as lessening access to health care and social services. Bridging the Digital Divide is a challenge that needs to be addressed carefully by providing material access as well as by promoting motivational, skills and usage access, through introducing meaningful and practical local applications and cultural content.

6 Methodology and Research Design

6.1 Introduction

This chapter presents the framework of this study. The aim of the chapter is to provide adequate understanding of the vantage point of the researcher in viewing the social world. It also describes and justifies the research design. The chapter uses the research question as its starting point. It discusses the accepted knowledge claims in relation to existing theories, and provides reasons for the selection of particular theoretical approaches. This theoretical perspective is then connected with an appropriate methodology, providing an explanation for this choice. Data collection methods and their relative merits are discussed in order to demonstrate the rationale for selecting them for the study. Finally, the areas of ethical considerations, field work, and achieving quality in research, are discussed.

Research Question:

What impact has the introduction of Information and Communication Technologies (ICTs) to undergraduate distance education (DE) programmes in Sri Lankan state universities had on facilitating access to higher education (HE)?

This leads to the following sub-questions and specific questions:

1. How have ICTs been introduced to undergraduate DE programmes in contemporary Sri Lanka?
 - a. What is the government rationale for introducing ICTs to undergraduate DE programmes and which initiatives have been introduced?
 - b. How have these been implemented by the state universities providing DE undergraduate degree programmes?
2. How are these initiatives perceived and experienced by the students on DE undergraduate degree programmes?
 - c. What ideas and beliefs do students have about the introduction of ICTs to undergraduate DE degree programmes?
 - d. How do they utilize ICTs to engage in their learning programmes?
3. How have ICT based DE programmes influenced 'access' to HE?

- e. Why have students enrolled on these programmes?
 - f. How well are they prepared for these programmes regarding skills, motivation and resources?
 - g. What are the characteristics of students who have gained ‘access’ to HE through these initiatives?
4. What are the strengths and constraints of the DE system implemented?
- h. What are the difficulties faced by students in participating in these programmes?

6.2 Knowledge Claims

Researchers make assumptions in understanding social phenomena; these are known as ‘knowledge claims’ (Crotty 1998). These knowledge claims are called epistemologies and ontologies (Crotty 1998) or paradigms (Guba and Lincoln 1994). “What is knowledge?” (ontology) and “how we know it?” (epistemology) are important claims that underpin research.

6.2.1 Epistemology

Epistemology is the theory of knowledge; what is considered adequate knowledge in a given discipline is an epistemological question (Bryman 2008). A philosophical basis to establish what knowledge is possible, and how that knowledge can be evaluated as adequate and legitimate, is offered by epistemology and therefore it shapes ‘*how we know what we know*’ [original emphasis] (Crotty 1998, p8).

Subjectivism and objectivism are two such epistemological positions. Objectivism claims “meaning and therefore meaningful reality exists as such apart from the operation of consciousness”; subjectivism affirms that “meaning does not come out of interplay between subject and object but is imposed on the object by the subject” (Crotty 1998, p8). Both claims have been challenged by intellectuals over the years. Does an object carry an intrinsic meaning? If so, would that meaning be the same for everyone? For example, an object that is considered sacred in one culture may not be seen similarly in another. Thus, it can be seen that one’s interpretation of the world depends heavily on one’s values, beliefs and culture. On the other hand, can the object make no contribution to the generation of meaning? The object may be meaningless such as the ‘pseudo poem’ presented by Fish (1980) to his

students. This pseudo poem comprised some words written on a blackboard while teaching to another class, which he introduced to the next class as a ‘poem’. Nevertheless, it became an important element for his students during the process of meaning construction.

Being sceptical of these knowledge claims, the social world is viewed in a different perspective that can best be described as:

[t]here is no objective truth waiting for us to discover it. Truth, or meaning, comes into existence in and out of our engagement with the realities in our world. There is no meaning without a mind. Meaning is not discovered, but constructed (Crotty 1998, p8-9).

People construct meaning and knowledge as they engage with and interpret the world in their day-to-day lives (Crotty 1998); the invention of concepts is an approach to make sense of these experiences. Modifications to existing concepts are incorporated when they are challenged by newer experiences, thus constructing further knowledge (Schwandt 1994). People develop different and multiple subjective meanings in order to understand their experiences, which are shaped by their historical and cultural backgrounds (Creswell 2003). Thus, the same phenomenon can give rise to different meanings in different settings. This epistemological stance is known as constructionism. The terms ‘constructionism’ and ‘constructivism’ are used interchangeably in the literature (Burr 1996; Crotty 1998; Creswell 2003; Lewis-Beck, Bryman et al. 2006).

6.2.2 Theoretical Perspective

Identification of the theoretical underpinnings of a research study is important as it provides a framework, which facilitates the understanding of social phenomena and the interpretation of research findings (Bryman 2008). It also demonstrates the philosophy underpinning the chosen methodology of a research project (Crotty 1998). As such, the theoretical perspective and method(s) are intertwined. It is therefore evident that “different ways of viewing the world shape different ways of researching the world” (Crotty 1998, p66).

Positivism and its variants have dominated traditional social science research. The positivist approach, which follows the methods of natural sciences, relies on value-free, detached observation (Crotty 1998). This research project is viewed as an exercise in meaning construction. Therefore, a positivist or postpositivist approach that relies on value free,

detached observation and deterministic and reductionist assumptions does not provide a basis for this work.

In contrast to positivism, interpretivism emerged as an attempt to understand the subjective meaning of social action (Bryman 2008). Symbolic interactionism is one division of the historical splits of interpretivism, stemming from the thoughts of the American philosopher George Herbert Mead (Morris 1934; Blumer 1969). Three important properties distinguish symbolic interactionism: an individual's act toward a thing depends on the meanings that the individual holds for it; these meanings originate from social interactions; and these meanings are approached and changed through an interpretative process (Blumer 1969). An emerging vital concept of symbolic interactionism is the interpretation of another by adopting their perspective (Blumer 1969; Crotty 1998). On the one hand, symbolic interactionism is appealing due to its emphasis on culture and attempts to place the investigator in the place of people being studied to make a better interpretation of the setting. On the other hand, it suffers from being prepared to accept meanings at their face value (Crotty 1998). Blumer (1969) argues that the aim of an exploratory study is to develop, as far as possible, a complete understanding of a social phenomenon; adopting another's viewpoint provides first-hand information required in developing that understanding. However, there are other viewpoints that question the ability of one to adopt another's viewpoint.

An exploratory study focusing on a developing country, especially in an area having potential to contribute to that country's development by informing policy, needs to be rich in depth. The concept of interpretation of another by adopting their perspective, which allows first-hand knowledge, is vital in such a study. This research project is undertaken by a researcher who:

- is a native Sri Lankan
- has experienced the Sri Lankan education and higher education (HE) system
- has been exposed to distance education (DE)
 - at an early age using television broadcasting to prepare for University of Warwick English for Communication exams
 - during undergraduate studies to prepare for a Graphics and Image Processing module conducted by a lecturer from the National University of Singapore

- to prepare for Australian Computer Society examinations for Information Technology
- has experienced the Learning Management System (LMS) that is used in Sri Lankan state universities
 - as a learner on a postgraduate programme
 - as a facilitator for undergraduate and postgraduate students during a tenure as a lecturer in a state university

Therefore, the researcher has sufficient experience to explore the research setting as an insider. The purpose of this research is to better understand the impact of ICTs on DE undergraduate degree programmes in Sri Lanka. The research findings are intended to reflect the contemporary situation in the country with respect to the use of ICTs for DE. Thus, the perspectives of students and educators are of paramount importance. Hence, the study adopts a symbolic interactionist approach.

Structuralism, another theoretical perspective, requires the comprehension of the inner structures in order to understand how they control the surface structures (Glazer 1994). However, would this perspective adequately represent the experience of an individual or of a small group? In contrast to structuralism, post-structuralism views things to be disorderly and unstable. Derrida, a well known post-structuralist, offered a subversive and deconstructive approach, which was given great significance within the postmodernist framework. This perspective was an attempt to ‘free’ society of the ideas of intellectual authorities that create the dominant discourse (Ritzer and Goodman 2003). Many similarities can be seen between poststructuralist theories and postmodern practices which makes it complex to differentiate between them (Sarup 1993; Ritzer and Goodman 2003). In fact, there is no clear line drawn between post-structuralism and postmodernism and “postmodern thinking can be seen as an expansion and an exaggeration of poststructuralism” (Ritzer and Goodman 2003, p94).

Postmodern thinking tends to be relativistic and takes account of ambiguity, contradictions and discontinuities as opposed to modern social theory, which is founded on a universal, rational basis (Ritzer and Goodman 2003). The stance that knowledge has secure and certain

foundations (foundationalism) is rejected by postmodernists; they also refuse the idea of a grand narrative and believe in localized narratives (Dickens and Fontana 1994).

The postmodernist context of doubt, [...] distrusts all methods equally. No method has a privileged status. But a postmodernist position does allow us to know “something” without claiming to know everything. Having a partial, local, and historical knowledge is still knowing (Richardson and St.Pierre 2005, p961).

Many criticisms of postmodernism stem from its rejection of grand narratives and its vagueness (Ritzer and Goodman 2003). However, postmodernist thinking, namely the rejection of absolute truths, objective values and the acceptance of local truths and values, makes it suitable for interpreting the results of this study. Solutions to bridge the Digital Divide (DD) and possibilities of providing HE access to the masses using ICTs may exist; but this does not necessarily mean that this will be an absolute truth applicable to all contexts. In many studies, the developing world is taken as a whole and poverty, illiteracy, gender disparity and civil unrest as seen by the intellectual authorities are reported as “the discourse.” Approaching this research with a postmodernist perspective would allow accommodation of localized discourses that had been suppressed by the dominant discourse over the years. Although research findings present an understanding of the situation, it is acknowledged that there may be various other representations of the same; because postmodernism stresses different forms of individual and social identities and believes that it is not possible for anyone to understand ‘everything’ (Sarup 1993).

The rapid rate of social change fuelled by the advancement of ICTs and transportation is evident in most parts of the world. The Internet and other media have successfully compressed the world, where distant locations and their happenings seem more familiar than the local neighbourhood. Liberalization and deregulation policies and the advancement of ICTs have brought a global economy into existence (Castells 2000b), creating greater interdependence between nations. Not only the economy but also politics, technology, culture, and society as a whole have been transformed, and form part of the interactive global arena. This increased connectedness, consciousness and interdependence is the process and result of globalization. The process of globalization poses opportunities and threats; nations are required to grab opportunities to advance in the globalized world; Sri Lanka is no exception. By increasing access to HE, Sri Lanka is attempting to improve its

human capital which is vital in the global knowledge economy (KE). Hence, globalization is a key theoretical underpinning to this research study.

In increasing access to HE through conventional means, many developing countries face difficulties due to budgets already stretched and exhausted. DE on the other hand, is accepted as a low unit cost solution to providing a high quality education (Perraton 2000; Rumble 2001; Bates 2005). In Sri Lanka, online DE is positively accepted by the government. Hence, concepts of DE and technology-mediated education are also important in the theoretical framework of this research.

The use of ICTs for instruction in Sri Lanka inevitably raises the question of affordability and accessibility for two major reasons. Under the “Free Education” policy, conventional state university HE is fully funded by the government, while DE in state universities has to be self-funded; this raises the question of affordability. The use of ICTs for instructions in a country where only 11.4% of the households possess computers, 20.3% of those aged 5-69 is computer literate (Department of Census and Statistics Sri Lanka 2009a) and 0.7% have access to the Internet (Department of Census and Statistics Sri Lanka 2004) raises the question of accessibility. Another important factor to be considered is that these numbers exclude the war-torn Northern Province and some districts of the Eastern Province, which are considered to be among the least developed areas in the country. Hence, in framing this research the concept of the digital divide (DD) provides an invaluable contribution.

In summary, symbolic interactionism and postmodernism have been selected as the epistemological and ontological framework of this research, whilst the concepts of globalization, DE, technology-mediated education and the DD underpin the theoretical basis of the study.

6.3 Methodology

Ethnography represents the study of people in their natural environment in order to understand their social meanings. A researcher participates directly in the setting to collect data in a methodical approach but “without meaning being imposed on them externally” (Brewer 2000, p6). Immersing oneself in the social setting for an extended period is a key concept in an ethnographic study (Hammersley and Atkinson 1996; Creswell 1998; Gilbert 2001; Hammersley and Atkinson 2007; Bryman 2008). The potential of ethnography, case

studies and grounded theory as research approaches for DE research was identified by Minnis (1985) more than 25 years ago. He argued that these can enhance the conceptualization and development of theory in DE research. Ethnographic studies generally offer a good understanding of the situation being studied, grounding it in data from an insider perspective. Therefore, a good understanding of the contemporary situation in Sri Lanka with respect to the use of ICT in DE can be gained by employing an ethnographic study. In fact, discussing the types of studies that are suitable for ethnographic investigations, Pole and Morrisson (2003) highlight the importance of an ethnographic approach to investigating ICT implementation at the level of the individual, the institution and the locale in order to understand the diversity of meanings and understandings. Heath (1997) argues that ethnography is a good approach when studying the use of technology in different environments, and that it provides a means with which to evaluate the contemporary setting of an environment. Hara and Kling (2003) have employed ethnographic research to study the distress of students in a web-based DE programme, while Guribye and Wasson (2002) demonstrated that ethnography can be a creative and challenging method to study distributed collaborative learning. Together these demonstrate that ethnography is a highly suitable approach for this research.

Although ethnography is considered a very good method to produce a quality description of the object of research, there are some drawbacks. 'Going native' is one of the mostly cited drawbacks of ethnography where ethnographers get wrapped in the dominant discourse and lose their sense of being a researcher (Bryman 2008). However, as mentioned earlier there are postmodernists who are sceptical of the idea of 'going native' claiming that it is impossible for an outsider to understand a setting as an insider. Another problem of ethnography is lengthy, time consuming but unfocused field work that can result in superficial data. Being aware of such pitfalls and planning the data collection during field work helped to avoid such mistakes in this research project.

Being an insider by sharing cultural understanding and educational experiences, and being an outsider by not being directly related to researched organizations provided the researcher with both advantages and disadvantages. Some student respondents before agreeing to interviews asked whether the researcher was employed by their institution. When told that the project was an independent research project, they seemed happier to participate. On the

other hand, because the researcher was not employed by the institutions that were researched, sometimes it was difficult to obtain permission to recruit participants and access data held by the institutions. However, overall, the researcher believes that being an insider and outsider at the same time was beneficial for this research project. It allowed insight into the true student experiences, which are presented and discussed in Chapters 7-10.

6.4 Method

Method in Greek means “a route that leads to the goal” (Kvale 1996, p4); in this respect, method in a research context is the route that guides a researcher in carrying out the research. The selection of appropriate method(s) depends on several important factors, such as: the type of questions to be answered; the investigator’s ability to control the actual events; and the period of focus, whether contemporary or historical (Yin 2003). Crotty (1998) argues that the view that quantitative methods are exclusive to objectivist research, and that qualitative methods such as interviews are exclusive to subjectivist or constructivist research is contestable. In this research, methods are selected based on their relative merits and applicability to the research context.

6.4.1 Case Study

When a researcher explores a programme, an event, an activity, a process or individual(s) in depth as a study, it can be considered a case study. A case study is bounded by time and activity, and the researcher collects data about the case over a sustained period (Robson 1993; Stake 1995). Three types of case studies are observed by Stake (1998):

1. Intrinsic case – a study of a particular case (here the ‘case’ is of special interest)
2. Instrumental case – here the ‘case’ is not of special interest
3. Collective case – several cases are studied jointly in order to understand the phenomenon.

Mabry (2008) distinguishes between typical or atypical case studies: a typical case study is a representative of a larger population or general situation, while an atypical case study is in conflict with the ordinary. However, this distinction is questionable in the postmodern perspective in which any generalization is considered impossible.

Yin (2003, p2) argues that:

the distinctive need for case studies arises out of the desire to understand complex social phenomena. [...] [T]he case study method allows investigators to retain the holistic and meaningful characteristics of real-life events.

Hence, where statistical methods and formal models are difficult to employ (due to the complexity of the phenomena), case studies provide a strong method for investigation (George and Bennett 2005). Several other advantages of case studies are: the potential for reaching a high level of conceptual validity (by identifying and measuring indicators for complex concepts); the likelihood of developing new hypotheses; the ability to closely examine the hypothesized function of causal mechanisms (George and Bennett 2005). However, Kilduff and Mehra (1997), arguing from a postmodern perspective, suggest that it is not possible to understand causal mechanisms because the causes to be investigated cannot be isolated in the actual social world.

Case studies are a preferred method when explanatory questions are investigated in real life, contemporary phenomena where the level of control (if any) an investigator has is very limited (Yin 2003). Since all these criteria matched the problem at hand, a case study method was selected.

A single case study design is preferred for a unique case or when the study is longitudinal; it is also useful to test a well formulated theory (Yin 2003; George and Bennett 2005). As this project involves modest time-scale exploration of a phenomenon with multiple instances a multiple case study design is more suitable. It also has advantage over single case study design due to a single case study's likelihood of misrepresentation of a situation and the susceptibility of misjudgement of attributes in case selection (Yin 2003). With a multiple case study design it is also possible to compare and contrast findings; it can also improve generalizability, if under different conditions common conclusions could be drawn. At the same time, there are scholars who maintain that generalization is not possible in case study research (Lincoln and Guba 2000). Critiques of multiple case designs argue that such designs result in inadequate attention for any single case (Bryman 2008). Due to the relative merits of multiple case study design, a multiple case study using an ethnographic research approach was selected as the research method for this study even though this demanded extensive resources and time.

6.4.1.1 Case Selection

The identification of a case to be studied often depends on the researcher's interest and the ability to negotiate access (Mabry 2008). However, George and Bennett (2005) are critical of this viewpoint. They argue that:

One should not select cases simply because they are interesting, important, or easily researched using readily available data. Rather case selection should be an integral part of a good research strategy to achieve well defined objectives of the study (George and Bennett 2005, p83).

In fact, the critiques of case study research often focus on case selection. Although it is important to consider George and Bennett's argument on case selection, Mabry's justification for case selection cannot be ignored. No matter how good the selected cases are, unless the researcher can negotiate access, the study cannot materialize. There are some important criteria that were evaluated in the selection of cases for this study.

In Sri Lanka, there are several state universities that offer DE at undergraduate level. Of these, four universities participated in the Distance Education Modernization Project - DEMP (as of December 2008). There was one other state university that did not participate in this programme that had implemented an online course for their DE degree programme. As the study is concentrating on the impact of ICT, cases were selected from these institutions that had implemented ICT in their DE degree programmes. Out of these, two universities were selected as they provided:

- Satisfactorily different characteristics with respect to their DE practices
- A portrait of different stages of development in DE offerings
- A representation of diverse phases of growth with respect to the use of ICTs in DE programmes
- Education for the majority of distance learners in the country

Selected institutions were (pseudonymous):

1. Yellow Fields University (YFU)
2. Orange Valley University (OVU)

6.4.2 Population for Study

It was important to understand the viewpoints of the policy maker, of the policy implementation authority and of the end users who experienced the implemented policy at

the university study programme level, in order to gain a better view of the contemporary Sri Lankan context. Therefore, data collection was required at these levels: at the policy making level (National Education Commission - NEC); policy implementation levels (Ministry of Higher Education - MoHE, University Grants Commission - UGC, the DEMP's and each university's authorities); and at the end user level (students and lecturers/tutors).

Distinctions between different types of degree programmes have deliberately not been made so as to examine the different perspectives that may emerge from different groups of learners/teachers. In adopting a postmodernist vantage point, it is essential to provide sufficient opportunity for all groups to voice their concerns.

6.4.2.1 Sampling

With limited resources, it is not possible to study the whole population of interest; hence, researchers draw a sample from the population. The sampling technique can broadly be divided in two, namely: probability sampling and non-probability sampling. Probability sampling allows a generalization of findings, and for survey-based research probability sampling is generally recommended (May 2001). Non-probability sampling is generally used when developing scales, developing tentative hypotheses or when an exploratory view of the data patterns is required (DeVaus 2004). Qualitative studies in general utilize purposive sampling (Glaser and Strauss 1967; Bryman 2008), a form of non-probability sampling; hence, this research, too, has utilized purposive sampling. In purposive sampling, participants are selected in a strategic way in order to find answers to research questions (Bryman 2008).

6.4.3 Data Collection Methods

There is a plethora of data collection methods available for ethnographic researchers. However, effective data collection methods largely depend on the type of project undertaken. As argued by Charmaz (2006, p15):

although methods are mere tools, they do have consequences. Choose methods that help you answer your research questions with ingenuity and incisiveness. *How* you collect data affects *which* phenomena you will see, *how*, *where* and *when* you will view them, and *what* sense you will make of them [original emphasis].

This shows the importance of identifying appropriate methods.

6.4.3.1 Interviews

Many qualitative studies use interviews as a data collection method because this allows researchers to probe into interesting areas of inquiry to gather rich data.

An interview is literally an *inter view*, an inter change of views between two persons conversing about a theme of mutual interest [original emphasis] (Kvale 1996, p2).

Kvale (1996; 2008) views qualitative research interviews as a knowledge-construction exercise between the researcher and the participant. In fact, today a growing number of qualitative researchers recognize interviews as an ‘active interaction’ (Holstein and Gubrium 1995; Fontana and Fery 2005) between interviewer and interviewee(s). However, different epistemological orientations can generate varying viewpoints with respect to the knowledge generated through an interview. The metaphors of the interviewer as a miner and the interviewer as a traveller introduced by Kvale (1996) demonstrate these orientations.

In the *miner metaphor*, knowledge is understood as buried metal and the interviewer is a miner who unearths the valuable metal. Some miners seek objective facts to be quantified; others seek nuggets of essential meaning. [...] The alternative *traveller metaphor* understands the interviewer as a traveller on a journey that leads to a tale to be told upon returning home. [original emphasis] (Kvale 1996, p4).

The traveller metaphor denotes the constructive understanding of the world and this is consistent with the knowledge claims accepted, creating a tight link between method, methodology and knowledge claims.

Although interview is a rich method for gathering qualitative data, it is not without scholarly criticism. There have been accusations of it being person dependent, subjective and leading. However, Kvale (2008) observes this from a different perspective. He suggests,

rather than attempt to eliminate the influence of the personal interaction of interviewer and interviewee, we might regard the person of the interviewer as the primary research instrument for obtaining knowledge, which puts strong demands on the quality of his or her knowledge, their empathy and their craftsmanship (Kvale 2008, p86).

In fact, this is the direction where interview as an active interaction leads. Furthermore, by conducting interviews with different groups of people relevant to a phenomenon, the researcher can develop a full picture of the setting. Methodological tools such as triangulation (discussed later in the chapter) help researchers take the full advantage of this powerful method of data collection, helping to maximize scientific rigour.

Many forms of interviews can be identified in the literature, out of which three major interview types can be elicited: structured, unstructured and group interviewing (Fontana and Fery 2005). Structured interviews pose a pre-established set of questions in a sequence allowing little or no variation, expecting the interviewer to be neutral. In contrast, unstructured interviews place great importance on the interviewee's story. Between these two extremes lies the semi-structured interview, which is guided by a set of questions, but nevertheless places much interest on the participant's views where the overall direction of the interview is also influenced by the interviewees' views. Group interviews are generally designated as focus group interviews (Fontana and Fery 2005), as a collective conversation or an interview in a group setting (Kamberelis and Dimitriadis 2005). Group interviews are considered more economical and stimulating. However, apart from the difficulties of the physical arrangements of group interviews, they suffer from 'group think' (Fontana and Fery 2005). The form of information sought by the interviewer largely determines the type of interview to be employed, including face-to-face interviewing, telephone interviewing, and computer assisted interviewing. In face-to-face interviewing, the influence of both the interviewer's personality and sensitive questions are two aspects that require consideration. However, as already discussed, interviewer influence can be converted into a positive effect considering the active nature of the process, and thus it can be rated as a very good approach to be employed in this research. Telephone interviews (or voice call over the Internet) on the other hand can reach distant interviewees cost-effectively, provided that the infrastructure is available. As the researcher wanted to reach distant learners this method of interviewing was highly appropriate due to the physical barriers.

The focus of the study, the use of ICT in DE and its implications for access, requires an understanding of how learners view this practice. Therefore, semi-structured interviews were employed as the main method of data collection because semi-structured interviews provided general guidelines to conduct the interview with flexibility to generate rich qualitative data through probing.

Cultural understanding is considered a prerequisite for successful qualitative interviewing (Rubin and Rubin 1995). Culture, for Rubin and Rubin (1995), is the interpretation of the world by developing a shared understanding. With this insight, it is worthwhile indicating a methodological flaw in Andersson's (2008b) attempt to identify major challenges for e-

Learning in developing countries. She had used the Bachelor of Information Technology (BIT) programme offered by the University of Colombo School of Computing as one of her case studies. Describing her field work she claims, “students were shy or for some other reason hesitated to talk” (Andersson 2008b, p49). In fact, she had overlooked the use of English as the language of communication. Sinhala is the native language of most Sri Lankans. Due to the lack of qualified English teachers, many rural students have a poor knowledge of English even though it is a compulsory subject on the school curriculum. Although, she mentions that she overcame this problem by requesting students to write letters instead of speaking to her (Andersson 2008b; 2008a), responses received are likely to be from competent English users, largely comprising students from National Schools and elite families. It is not clear whether this was considered in the analysis. Even when

respondents may be fluent in the language of the interviewer, there are different ways of saying things – or indeed things that should not be said at all – linking language and cultural manifestations (Fontana and Fery 2005, p707).

Therefore, even if the language barrier is overcome, the cultural barrier remains a challenge for her. As one of Andersson’s respondents comments:

In our country as well, the rural areas are really really rural. They don’t have IT at all. *You’d be surprised*. Some of the parts of our country still do not have electricity [emphasis added] (Andersson 2008b, p55).

This shows that the respondent considers the researcher an ‘outsider’ who lacks knowledge of the context. Therefore, it is reasonable to question the methodological choice, as language and culture are important considerations for successful qualitative interviewing. Sharing the same cultural understanding and native language makes it possible for the researcher to overcome the barriers faced by Andersson (2008b; 2008a). In this research the interviewee was given the option of selecting his/her preferred language (either Sinhala or English) for the interview. Therefore, interview as a data collection method was expected to provide rich, in-depth understanding.

6.4.3.2 Questionnaires

A survey, largely viewed as a positivist form of data collection, can also be used in a qualitative study to increase the richness of the data, and especially to gather wider views. Structured interviews or self-completion questionnaire are the two main ways of administering a survey (Bryman 2008). Structured interviewing has advantages such as:

attracting higher response rates and providing clarifications for questions. However, it consumes more resources. On the other hand, self-completion questionnaires are an efficient method of data collection (Robson 1993), but the response rates can be low. In using a questionnaire, the researcher needs to be aware of presenting relevant questions. Further, data captured in a questionnaire is generally superficial and the honesty of responses is difficult to verify (Robson 1993). However, Yu (2010) argues that the issue of self-reported data, such as this, is less serious in studies conducted in naturalistic settings than in experimental settings. Although survey researchers typically utilize closed questions in questionnaires, there are advantages of using open-ended questions (Bryman 2008). However, answering open-ended questions places demands on the respondent and the level of literacy can also cause problems. Answers to closed questions are easier to analyse, but spontaneous answers cannot be captured through them. Therefore, a balance between the two types needs to be maintained as appropriate.

Self-completion questionnaires were used in this study and both printed and electronic media were employed for data collection. The main rationale for employing a questionnaire method was to gather wider views as well as to invite respondents to volunteer for interviews. It was expected that after completion of the questionnaire, and understanding the validity of the research, respondents would volunteer for interviews.

6.4.3.3 Documentary Evidence

A document is a written text in a physical medium where the medium is primarily there to contain the text (Scott 1990). In this sense, images (photographs or videos) can also be categorized as documents (Mason 1996); images may also be considered as texts (Silverman 2001). In approaching any documentary evidence, there are four criteria that need to be applied; authenticity, credibility, representativeness, and meaning (Scott 1990). Authenticity checks the genuineness of the document while credibility observes whether the evidence is undistorted and free from error. Representativeness is the typicality of the document and meaning is its comprehensibility. When interpreting documents, Scott (1990) suggests using three levels of meaning interpretation; the author's intent on producing the document, the meaning received by the audience, and the internal meaning of the document itself. Thus, it is vital to understand the circumstance under which a document was produced, in order to interpret its meaning.

The automatic activity logs of online learning environments are a good source for identifying the level of activity within the system. Systems administrators can collect these logs from the server which can then be interpreted. Available reports (such as project reports, grant applications, project evaluation reports), promotional material, and policy documents are also utilized as documentary evidence along with student demographic data recorded in registers. The rationale for employing documentary evidence as a data source in this study was to supplement data collected from other sources. For example, activity logs provide a time series data of learning environment use by students, which can be analysed along with students' statements of use in order to complement interview data.

6.4.4 Triangulation

In case study research, individual sources of evidence are not generally recommended (Robson 1993; Yin 2003; Stake 2005). Denzin (1970) emphasises the necessity of examining sociological problems from as many different methodological perspectives as possible. He suggests conceiving 'triangulation' as involving a variety of data, investigators, theories as well as methodologies. 'Triangulation' is a word derived from the naval method of locating ships at sea that uses three distinct points to find a ship's position. However, triangulation does not require three sources (or methods, observers, data collection events or theoretical perspectives); fewer or more than three may be used as appropriate (Mabry 2008). Janesick (1998) describes triangulation types as:

1. Data triangulation: utilizing several different data sources
2. Investigator triangulation: utilizing different researchers or evaluators
3. Theory triangulation: utilizing a variety of perspectives in interpreting a set of data
4. Methodological triangulation: utilizing multiple methods to investigate a single research problem

She proposes to include a fifth type in the list: interdisciplinary triangulation to enable researchers to think broadly. Richardson and St.Pierre (2005) propose the idea of 'crystallization' as there are more than 'three' sides to view the world. However, the concept of triangulation is about multiple sources; not necessarily 'three' viewpoints. Denzin and Lincoln's (2005b, p6) conception of triangulation as "the simultaneous display of multiple refracted realities" maintain this viewpoint. Triangulation is considered particularly useful in the analysis of qualitative data where trustworthiness can be questioned. This provides a way

to compare evidence collected from one source with another source and to some extent it provides a means of cross-validation (Robson 1993). However, there are concerns regarding the use of multiple methods with different and incompatible ontological and epistemological assumptions. According to Blackie (1991, p115),

[t]he common theme in discussion of triangulation has been the desire to overcome problems of bias and validity. It has been argued that the deficiencies of any one method can be overcome by combining methods and thus capitalizing on their individual strengths. However, the use of triangulation has been plagued with a lack of awareness of the different and incommensurate ontological and epistemological assumptions associated with various theories and methods.

On the other hand, Guba and Lincoln's (2005) position regarding combining elements of one paradigm with another (as long as they are not conflicting) is positive.

In this research, triangulation is used to:

1. Gather rich data to provide a detailed description of the phenomenon
2. Answer different questions posed by the research
3. Corroborate one source or method with another
4. Enhance validity and reliability of the research

Data triangulation was achieved by using different data sources to gather data. In viewing the case, policy makers', policy implementers', and finally the users' views were incorporated, thus providing three levels of representation of the data. Methodological triangulation was achieved by employing different methods such as interviews, questionnaires, and documentary evidence. The primary reason in favour of utilizing alternative means of enquiry was the belief that a multi-faceted approach would compensate for any weakness of one method or mode of enquiry, and would strengthen the outcome of research.

6.5 Ethical Considerations

Any research involving human participants raises ethical concerns (Murphy and Dingwall 2001; Hammersley and Atkinson 2007). As Murphy and Dingwall (2001) argue,

[h]ow can we form judgement about what will count as ethical practice in ethnography? *Consequentialist* approaches focus on the outcome of the research. Have participants been harmed some way, or, if they have been harmed, has this been outweighed by the research's benefits? They can be contrasted with *deontological* approaches, which focus on the inherent *rights* of research participants such as the right to privacy, the right to respect or the right to self-determination.[...] Ethical

research does not only just leave participants unscathed but also avoids infringing their rights [original emphasis] (Murphy and Dingwall 2001, p339).

Academic associations have formulated professional ethical codes in order to guide researchers. Informed consent, opposing deception, securing privacy and confidentiality, and accuracy of research are the main concerns of such ethical codes (Christians 2005). Informed consent identifies agreement for participation as voluntary and

the subjects of research have the right to be informed that they are being researched and also about the nature of the research (Punch 1994, p90).

Justification of covert ethnographic research is being questioned by many, and such objections could be due to the belief that this type of study breaches the human right of autonomy and dignity (Hammersley and Atkinson 2007). However, even if overt research is employed, one can argue that in instances such as observations not all participants' informed consent is given.

For this research, approval of the School of Systems Engineering Research Ethics Committee was obtained. Then, consent was sought from each educational institute included in the research. Each participant was provided with an information sheet (English: Appendix - D , Sinhala: Appendix - E) and an informed consent form (English: Appendix - F , Sinhala: Appendix - G) was completed by interview participants. These documents were produced both in Sinhala and English for easy comprehension by participants. They explained that participation was voluntary and that they could withdraw at any time. Furthermore, it was clearly communicated that all data collected would be kept strictly confidential and that data would only be used for academic research and publications. A raffle draw, which offered a cash prize of Rs.2,500 (about £14) was advertised in the information sheet. The winner was drawn from the names of interview participants who wished to enter the draw. This incentive was offered to show the recipients that their time and participation was valued. At the same time, a raffle draw was decided to avoid anyone participating in the research solely to claim the incentive. All interviews and other data collection procedures were conducted by the researcher in order to instil extra confidence in participants when engaging in the research.

6.6 Field Work

6.6.1 Permissions

As the Sri Lankan state university system generally attaches more value to authoritative requests, invitations to participate in the research (Appendix - H) were accompanied by a covering letter from supervisors of the project (Appendix - I), mirroring the practice appreciated in Sri Lanka. Even though three institutions were invited for the study, only two of them (OVU and YFU) responded. Each institution allocated an internal contact person to coordinate data collection with the researcher.

The contact person appointed by the OVU was a highly placed official of the centre which administers the DE programme of the OVU. Therefore it was a single point of contact to obtain necessary permissions. YFU on the other hand, appointed a lecturer as the contact person. Even though permission was obtained for data collection from the vice chancellor of the YFU, later permission from the deans of each of the four faculties was required before contacting respondents.

6.6.2 Gaining Access

6.6.2.1 Authorities

HE authorities in Sri Lanka such as the MoHE, the UGC and the NEC as well as the management of the DEMP were contacted directly by post/email. These letters/emails were addressed to carefully selected persons from these institutions requesting interviews. As the research topic was of great interest to most of the contacted authorities, the researcher was able to schedule most meetings with the selected personnel with relative ease.

6.6.2.2 Orange Valley University

The researcher was invited to a session at the Centre for Distance Learning (CDL) and was introduced as an independent researcher to the students, who were then in their final year of study. Students were happy to communicate with the researcher as they knew it was a legitimate research study and that the researcher was not employed by their institution. Printed information sheets were distributed requesting interested students to enter their contact details on a separate sheet where they were requested to provide name, contact

details (email/phone) and signature if they wished to be contacted at a later date to take part in the research (Appendix - J). Those interested students were then briefed about the research in informal conversations and a relationship was developed with them.

Scheduling face-to-face interviews with students from OVU was difficult because they were following an online programme and seldom had sessions at the University. As most of them had Internet facilities and were willing to use SkypeTM software to communicate with the researcher, this was used to interview some participants, while some others were interviewed over the phone. In one instance, a female respondent invited the researcher to her home and the researcher was accompanied by a parent for safety as well as for cultural reasons. One interview with a male student was held at a McDonalds restaurant. Although the venue was busy and noisy, it was selected because the researcher felt safe in a public place.

6.6.2.3 Yellow Fields University

The researcher was introduced to 6 lecturers from 3 faculties who volunteered to participate in the research and allowed the researcher to gather data from students taking their modules. At one faculty ICT-enabled courses were not delivered by the volunteered lecturers during the period of data collection. Therefore the researcher gathered data from students of the other two faculties.

YFU students have face-to-face sessions from time to time and it was possible to meet students at the University premises on those days. The procedure conducted at the OVU was repeated to gather contact information of students who were interested in participation.

6.6.3 Blending in

Being a graduate of a Sri Lankan state university, it was easier for the researcher to blend in with the students as she was aware of the “Campus Language” and the “Campus Culture”. After getting to know the researcher, respondents addressed her as “Akka” (elder sister). In the Sri Lankan state university culture, all students in a university are considered brothers and sisters; students at higher levels of the degree programme are considered elder brothers (Ayya) and elder sisters (Akka) while students at lower levels of the degree programme are considered younger brothers (Malli) and younger sisters (Nangi), irrespective of their age. In some instances students of engineering programmes posed subject matter questions to the

researcher, knowing that she too had studied engineering. In one instance when students were sharing a piece of sweetmeat following a national festival, the researcher was offered her share of it. Sharing food is another tradition of Sri Lankan university students to demonstrate their unity and inclusion in the group. Therefore the researcher believes that she successfully gained access to the setting as an insider.

6.6.4 Pilot Study

A pilot study is considered a ‘dummy run’ of the actual study. It is invaluable in any empirical research (Robson 1993). Bryman (2008) recommends the use of a pilot study, especially before administering self-completion questionnaires, because it is important to verify fixed-choice answers, adequacy and comprehensibility of instructions, and the questions in the questionnaire. Furthermore, piloting an interview schedule provides the interviewer with experience and confidence that help in actual interview administration. Although piloting entailed many resources, it was done, as the expected benefits outweighed its costs.

Six students at the OVU participated in the pilot study as they formed a subset of the target population. The questionnaire was administered (in print) and the time taken to fill it in was recorded. Participants were asked to mark things that were not clear. These questions were then re-phrased before the actual questionnaire administration. One student from this group was interviewed to pilot the interview guide (Appendix - K).

6.6.5 Data Collection

The researcher was engaged in data collection in Sri Lanka from December 2009 to March 2011.

6.6.5.1 Questionnaires

Questionnaires were prepared to be distributed using three methods:

- Online (Bristol Online Survey tool)
- Email (Microsoft® Word 2003 attachment)
- Print

At an initial stage it was identified that the online survey was taking too long to load and this discouraged participation. In fact, Jamtsho, Rinchen et al (2010b) reported a study where a

web-based questionnaire was used in Sri Lanka hoping to attract 500 responses, in fact had only received 20 responses. This shows that there are issues with online questionnaires when administrated in Sri Lanka. Thus only email and printed questionnaires were actually employed for this data collection. Microsoft® Word 2003 format was selected to present the questionnaire, as it was unlikely that newer versions of this programme would be available in most Internet-cafes and home computers. The email questionnaires were only distributed in English as the Unicode Sinhala fonts used for the questionnaire might not be available on recipients' computers, especially on public Internet access points where users do not have privileges to install fonts. Printed questionnaires were distributed in both English (Appendix - L) and Sinhala (Appendix - M), according to each participant's preference. The researcher translated the questionnaire from English to Sinhala with the help of a member of the Sinhala Translation Team from the University of Moratuwa. Translations were checked to ensure they were satisfactory by an English lecturer from the University of Sri Jayawardenapura. All participants from OVU preferred the English questionnaires while some students from YFU were more comfortable with using a Sinhala questionnaire.

Questions were organized into five sections: programme details; the use of ICT in the programme and student views; the use of ICTs for learning; and opportunities for using ICTs and demographic details. At the end of the fourth section, space was provided for comments. This space was used by several students to describe issues they faced when using ICTs. It was also observed that in some instances even though respondents preferred to answer the questionnaire in English medium, this space for comments was written in Sinhala. This shows the importance of using participants' mother tongue in data collection, because even though the respondent selected to respond to an English medium questionnaire, when expressing his/her thoughts freely s/he must have found that his/her knowledge of the language was restrictive. As the respondent in this instance knew that the researcher was able to comprehend Sinhala comments, s/he has used the language s/he is most comfortable with. If that had not been the case, it is suspected that the respondent would have skipped the open-ended question completely.

In questions where the respondent was asked to state the level of agreement or disagreement with a given statement, six responses ('very strongly agree', 'strongly agree', 'agree', 'disagree', 'strongly disagree' and 'very strongly disagree') were provided. An even number

of responses was used in the questionnaire as it is acknowledged that “in most cases there is a slight advantage in having an even number of steps rather than an odd number” (Nunnally 1967, p522). In instances where it was likely that there would be many possible answers, space was provided to write an answer if it was not already listed in the questionnaire. At the end of the questionnaire a statement invited respondents to take part in interviews, and space was provided to fill their contact details if they wished to volunteer. Some respondents filled in these details indicating their willingness to take part in interviews and they were contacted via email and telephone to arrange interviews.

The distribution of questionnaires at OVU was mainly done at the CDL session. Printed questionnaires were distributed by the researcher at the start of the session and later they were collected. 37 questionnaires were distributed; 33 were received out of which 30 were usable, achieving an 89% response rate. Email questionnaires were distributed through course coordinators to all registered students, but the response rate was very low; only 3 completed questionnaires were received, which were all usable. The OVU’s DE programme is considered to be one of the successful online courses in Sri Lanka under the DEMP project. Therefore these students had been sent other questionnaires (by email) by the DEMP as well as by other researchers. The students who were interviewed confirmed that they had not replied to the questionnaire because they were “fed-up” with email questionnaires.

At the YFU, printed questionnaires were distributed on four occasions, once in a regional centre and in other three instances at the main campus. At the main campus only 20 questionnaires in English were distributed (the other 50 questionnaires distributed were in Sinhala), while at the regional centre all students requested English medium questionnaires. Email questionnaires were sent to 26 students who provided their contact details, but only 6 responses were received, achieving only a 23% response rate. After repeated reminders, the researcher was able to contact two students who did not respond to the email questionnaire. It was revealed that they hardly managed the limited time allocated at the computer lab to complete assignments and that it was not possible to dedicate time to respond to a questionnaire. The response rate is summarized in Table 6-1. Questionnaire answer coding is provided in Appendix - N .

Table 6-1: Questionnaire Response Summary

	Description	No. Distributed	No. Received	Response Rate	No. of Usable Responses
1	Printed at Regional Centre	39	32	82%	30
2	Printed at Main Campus-1	23	20	87%	20
3	Printed at Main Campus-2	28	25	89%	25
4	Printed at Main Campus-3	19	15	79%	15
5	Email	26	6	23%	6
Total		135	98	72%	96

6.6.5.2 Interviews

Interviews with selected authorities and policy making bodies were started prior to starting data collection at the two selected universities. All interviews were audio recorded and later transcribed; where required interviewees were contacted for clarification.

Interviews at the selected universities were conducted face-to-face, via telephone or via SkypeTM software using the Internet, one-on-one except for two instances: 2 tutors from OVU were interviewed together at their request; 4 students were interviewed together at the YFU also at their request. Some interviewees were interviewed more than once. These interviews were conducted either in Sinhala or English as preferred by the interviewee. In one instance where the interviewee was a Muslim female whose first language is Tamil, English had to be used as the common language medium. Altogether 33 individual interviews and 2 group interviews were conducted to interview 36 participants; sample interview transcriptions in English (Appendix - O) and Sinhala (Appendix - P) are given in the Appendices.

Consent was received from interviewees prior to conducting the interview. When conducting interviews via telephone or SkypeTM, each interviewee was sent a posted consent form (with a self-addressed stamped envelope); this was explained and completed prior to the interview and a request made for it to be returned to the researcher by post.

Many students opt for DE due to their other commitments along with studies; it was therefore difficult to expect them to attend a face-to-face interview to take part in a research project. The use of communication tools such as SkypeTM and telephone for interviewing allowed the researcher to reach distant students who, juggling work, studies and life

commitments, nevertheless wanted to provide their views for this study. It also provided the opportunity to reach students residing far away from Colombo. This allowed different parties to voice their concerns. In one instance the researcher was able to contact a distant student whose locality was not serviced either by land phones or mobile broadband (mobile voice service was available with poor reception). This interview had to be scheduled for a day when the participant was in Colombo so that the researcher could phone him. The use of communication tools also helped the researcher to reach students from different administrative districts at a relatively low cost. The summary of data collection (Appendix - Q) and a map indicating the residency of interviewees (Appendix - R) is provided in the Appendices.

Critiques of telephone interviewing pose the concern that phone interviews are not guaranteed to be answered by the intended interviewee and that the interviewee may not be able to speak freely due to constraints in his or her situation. These were overcome by calling the interviewee on his or her mobile and making an appointment to conduct the interview. Before conducting a telephone interview the researcher called the interviewee at least three times: first to invite them for a telephone interview, secondly after sending consent forms by post, to discuss the form and to schedule the interview, and finally just before the scheduled time to check whether the interviewee was ready to be interviewed or would prefer to reschedule the interview. These short conversations helped the researcher to strengthen the already created relationship with each interviewee before the actual interview was conducted.

6.6.5.3 Documentary Data

Accessing documentary data on student demographics and usage logs posed several issues as there were no established information services in the Sri Lankan state university system. However, due to the good relationships the researcher had formed with representatives of the institution it was possible to collect the data required.

6.6.6 Exiting Field

A thank-you note was sent to all interview participants after the interview was completed. Further letters thanking the University authorities were sent after withdrawing from the setting. Even after the researcher exited the field, a few interview participants were contacted

for clarification (respondent verification) and to award the small cash prize to the raffle winner. On several occasions interview participants contacted the researcher on SkypeTM and by email as they wanted to maintain contact.

6.6.7 Challenges

6.6.7.1 Permission

Even though permission was obtained from heads of the institutions prior to visiting Sri Lanka, one institution was adamant that data collection could only proceed after obtaining permission from faculty deans. Thus the researcher was faced with time pressure as people from whom permission was needed did not respond. However, with repeated reminders permission was eventually obtained from all necessary authorities prior to the data collection.

6.6.7.2 Lack of Punctuality

It is generally accepted that Sri Lankans lack punctuality. This was experienced almost every time interviews were conducted. This posed a major challenge in scheduling interviews with students from the YFU as they were attending tutorials and the researcher had to accommodate interviews around those parameters. It also affected the researcher's ability to schedule more than one interview on a given day to maximize efficiency, as the researcher travelled nearly 3.5hours (one-way) to reach participants in Colombo.

6.6.7.3 Quality of Internet Connections

Even though the researcher invested a substantial amount of time in developing an online survey using Bristol Online Survey software, the difficulty of loading pages with slow Internet connections hindered the use of it for the research project. Identification of this issue at an initial stage prevented more serious repercussions as otherwise it could have led to an insufficient number of responses, and thus an inadequate amount of data for analysis.

6.7 Data Analysis

6.7.1 Quantitative Data

Quantitative data are generally analysed using statistical methods, and the choice of method largely depends on the type of quantitative data (Hilton 1995; Healey 2005). There are a number of purpose built statistical software packages such as GenStat[®] and SPSS[™] (Statistical Packages for Social Sciences) that are used to analyse quantitative data. In addition, there are other general purpose spreadsheet packages such as Microsoft[®] Excel[®] that can also be used as tools for statistical analysis. SPSS[™] 13.0 and Microsoft[®] Excel[®] 2007 software packages were used to analyse quantitative data due to familiarity, availability and simplicity.

6.7.2 Qualitative Data

There are different techniques for qualitative data analysis. A grounded theory approach, analysis of significant statements, content analysis, and discourse analysis are some of the options available (Creswell 1998; Silverman 2001; Creswell 2003). Research questions were used to systematically arrange data, and coding was done accordingly using the NVivo[™] 8 software package as the researcher was familiar with this software and it was easily accessible through the University of Reading licensing agreement.

6.8 Quality of Research

Quality is an important consideration in any research. As discussed earlier under the “Methods” section, in discussing the quality or credibility of research, the divide between qualitative research and quantitative research is noticeable (Bryman 2008). However, stating a list of criteria used to evaluate research publications, Silverman (2001) argues that those criteria are equally appropriate for qualitative or quantitative studies. Hammersley (2008) also argues that contrasting the two approaches is illusory, and proposes general standards for the assessment of quality. On the other hand, some researchers such as Denzin and Lincoln (1994b; 1998) argue that quality criteria depend on the research paradigm (for example see Table 6-2).

Table 6-2: Interpretative Paradigms

Paradigm/Theory	Criteria	Form of Theory	Type of Narration
Positivist/postpositivist	internal, external validity	logical-deductive, scientific, grounded	scientific report
Constructivist	trustworthiness, credibility, transferability, confirmability	substantive-formal	interpretative case studies, ethnographic fictions

Adapted from: Denzin and Lincoln 1994a

According to Denzin and Lincoln (1994b, p13-14),

the constructivist paradigm assumes a relativist ontology, a subjectivist epistemology, and naturalistic set of methodological procedures. Findings are usually presented in terms of the criteria of grounded theory. Terms such as *credibility*, *transferability*, *dependability* and *confirmability* replace the usual positivist criteria of *internal* and *external validity*, *reliability* and *objectivity* [original emphasis].

Trustworthiness and authenticity as measures of quality are proposed by Guba and Lincoln (1994) for research in the ‘constructivism paradigm’. They explain that, trustworthiness consists of credibility, transferability, dependability and confirmability, an aggregation of criteria proposed by Denzin and Lincoln (1994b). They also mention that credibility parallels internal validity, transferability parallels external validity, dependability parallels reliability, and confirmability parallels objectivity. Authenticity here is a criterion for: fairness (to eliminate marginalization); ontological authenticity (the level to which research provides better understanding); educative authenticity (improved understanding of the construction of others); catalytic authenticity (research as impetus for change); and tactical authenticity (empowered action) (Guba and Lincoln 1994; 2005). However, Denzin and Lincoln (1994b) maintain that there are no absolute criteria for judging reality or validity, only criteria derived from consensus about usefulness and meaning. They further argue that

all research findings have political implications. There are no value-free sciences (Denzin and Lincoln 1994b, p3).

However, validity, reliability, and generalizability are the traditional criteria used to evaluate ethnographic research (Brewer 2000). ‘Validity’ measures the extent to which the data accurately characterizes the event under investigation. According to Silverman (2001), triangulation and respondent validation are commonly used to validate data in qualitative studies. However, Janesick (1998) maintains a different perspective.

Validity in the quantitative arena has a set of technical microdefinitions of which the reader is most likely well aware. Validity in qualitative research has to do with description and explanation, and whether or not a given explanation fits a given description. In other words, is the explanation credible? [original emphasis] (Janesick 1998, p50).

She proposes crosschecking research work utilizing member checks and audit trails to affirm validity. Hammersely (2008, p44), on the other hand, suggests a different sense of the term ‘validity’, using it to denote ‘appropriately applied’ that is, equally valid for qualitative or quantitative paradigms.

Reliability, on the other hand,

refers to the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions (Hammersley 1992, p67).

In general, it can be regarded as the consistency or the stability of a measurement. This measurement can be an observation, an interview question or even a questionnaire item. Even though some researchers argue that reliability of observation is a concern only within quantitative and positivist research traditions, Silverman (2001) disagrees with this position and describes how reliability can be addressed with each type of data collection. In observations, he suggests using Spradley’s guidelines for recording (Spradley 1979, cited in Silverman 2001). Short notes made on the field; expanded notes created as soon as leaving the field; field work journal and running record of analysis and interpretation to address the issue of reliability. With respect to the use of documents, if criteria discussed earlier (authenticity, credibility, representativeness, and meaning) are already satisfied, he suggests employing ‘inter-rater reliability’ by involving several researchers to analyse and compare outcomes to demonstrate the reliability of analysis. In discussing reliability of interviews, he suggests considering: pre-testing of interview schedules; training of interviewers; use of fixed choice answers (if possible); and inter-rater reliability checks on coding.

Most quantitative researchers aim for generalizability by achieving statistical sampling procedures. Silverman (2001) proposes the use of purposive sampling, theoretical sampling and combining qualitative measures with quantitative measures to seek generalization in qualitative research. However, as discussed previously, there are scholars who view generalization as an impossible task in qualitative case study research (Lincoln and Guba 2000). On the other hand, Hammersley and Atkinson (2007) argue that, by engaging in

comparative analysis it is possible for ethnographers to provide reasonable judgements. However, they acknowledge the fact that none of the forms of social research can provide a definitive solution to the problem of generalization. Hence, this research attempted to provide reasonable judgements (as opposed to generalization) by employing purposive sampling, multiple case study analysis and comparative analysis of data.

6.8.1 Postmodern Ethnography

With the move to relativism and postmodernism,

the original conception of epistemic criteria, and perhaps even the very notion of validity or truth, are rejected as ideological and replaced by a political, ethical or aesthetic concern with valuing, appreciating, or treating fairly, multiple conceptions of or discourse about the world (Hammersley 2008, p47).

Drawing on this line of thought Denzin and Lincoln (2005a) argue for qualitative research criteria “rooted in the concept of care, shared governance, neighbourliness, love and kindness” (Denzin and Lincoln 2005a, p911). In postmodern ethnography, producing universally valid knowledge by the precise representation of the researched is challenged. All representations are considered ‘constructions’ of the social reality; these are considered partial and selective representations, linked to the researcher and the circumstances under which the data were gathered, creating the problem ‘crisis of representation’ (Brewer 2000). In addition, Brewer (2000) argues that employing traditional criteria to evaluate ethnography became problematic as terms such as ‘validity’, ‘reliability’, and ‘generalizability’ were deconstructed, creating the ‘crisis of legitimation’.

Reflexivity, or being explicit about the social processes that influence data collection and circumstances under which the data gathered, was a response to the ‘crisis of representation’ by the postmodern ethnographers (Brewer 2000). Thus, ethnographers “should claim no more for the account than what it is, a partial, selective and personal version” of the social reality being studied (Brewer 2000, p44).

Hammersley (1992) identifies criteria to evaluate ethnography; being ambitious enough to claim that they are appropriate to assess all social research. His criteria to assess ethnography are ‘validity’ and ‘relevance’. By ‘validity’, he means the truthfulness of the account:

an account is valid or true if it represents accurately those features of the phenomena that it is intended to describe, explain or theorise. [...] I recognize that we can never know with certainty whether an account is true; for the obvious reason that we have

no independent, immediate and utterly reliable access to reality. Given that this is the situation, we must judge the validity of claims on the basis of the adequacy of the evidence offered in support of them (Hammersley 1992, 69).

The concept of ‘adequacy’ in evaluating the validity of a claim is not simple to judge. Hence, he proposes plausibility and credibility to decide on the sufficiency of evidence provided by the social researchers. With the existing knowledge or considering the situation under which the research was conducted if the claims made are plausible and if the results can be verified as credible then, they can be accepted as adequate. Relevance as an assessment criterion on the other hand, can be judged according to the importance of the topic and the contributions made by the research.

This research is conceived as a meaning construction ethnographic inquiry; hence, from the quality criteria presented, Hammersley’s (1992) criteria, validity and relevance form a good foundation for a comprehensive quality framework. Instead of generalization, with its postmodern bias, this research attempts to provide reasonable judgements.

6.9 Conclusion

The epistemological position, theoretical perspective and methodology adopted for this research have been discussed providing reasoning for each preference. Adopting a constructionist epistemological position, guided by symbolic interactionist and postmodernist theoretical perspectives, research is conducted through multiple case studies, using an ethnographic research approach. Semi-structured interviewing, questionnaires and documentary evidence were employed as data collection methods in this research. Triangulation was used to compensate for any weakness of one method or mode of data collection, thus to strengthen the outcome of research. Ethical approval was sought for the research and good ethical conduct was maintained throughout the process. After presenting a comprehensive discussion of quality assessment criteria, it is argued that validity and relevance are relevant criteria for the quality assessment in this research.

7 Data Presentation, Analysis and Discussion – Preamble to Case Studies

7.1 Introduction

This is the first of four chapters on data presentation, analysis and discussion. The research questions guided the data collection, which were then analysed and the results are presented in these chapters under the headings of each research question where possible. Data collected through interviews, questionnaires and documents were used in the analysis, and both qualitative and quantitative data are presented together in addressing the research questions.

This first chapter in data presentation, analysis and discussion addresses the first research question as a preamble to the case studies in the next two chapters by providing insight into the government perspective in introducing ICT-enabled distance education (DE) programmes in Sri Lanka. (The research questions are restated before presenting the analysis.) The following two chapters (Chapter 8 and Chapter 9) present two case studies on the implementation of ICT-enabled DE in two universities under this government initiative. Chapter 10 compares the implementation in these universities and discusses their implications.

The research question and sub-questions are:

What impact has the introduction of Information and Communication Technologies (ICTs) to undergraduate DE programmes in Sri Lankan state universities had on facilitating access to higher education (HE)?

1. How have ICTs been introduced to undergraduate DE programmes in contemporary Sri Lanka?
 - a. What is the government rationale for introducing ICTs to undergraduate DE programmes and which initiatives have been introduced?
 - b. How have these been implemented by the state universities providing DE undergraduate degree programmes?
2. How are these initiatives perceived and experienced by the students on DE undergraduate degree programmes?

- c. What ideas and beliefs do students have about the introduction of ICTs to undergraduate DE degree programmes?
 - d. How do they utilize ICTs to engage in their learning programmes?
3. How have ICT based DE programmes influenced ‘access’ to HE?
- e. Why have students enrolled on these programmes?
 - f. How well are they prepared for these programmes regarding skills, motivation and resources?
 - g. What are the characteristics of students who have gained ‘access’ to HE through these initiatives?
4. What are the strengths and constraints of the DE system implemented?
- h. What are the difficulties faced by students in participating in these programmes?

7.2 The Government Perspective

1. How have ICTs been introduced to undergraduate DE programmes in contemporary Sri Lanka?

The government of Sri Lanka claims that it is dedicated to developing the economy whilst improving the quality of life of its people. Many projects have been initiated to develop the economy and to combat poverty, including attempts to improve the employability of the young through improved educational and vocational training systems. Following several large-scale research studies (Nanayakkara, Wijesuriya et al. 2006; Nanayakkara and Wijesuriya 2007), a new policy framework prioritising expansion of HE was formulated and presented in 2009. The policy also emphasized the importance of multiple modes of delivery in the HE sector and the importance of ensuring quality and relevance in all programmes. For example,

Policy 5: Make provision to provide opportunities for Higher Education for all those seeking such education.

Policy 6: Establish multiple modes of delivery in the Higher Education Sector.

Policy 14: Encourage development of diverse programs of study to cater to the needs of society and offer them through multiple modes of delivery including distance and online learning (National Education Commission 2009, p1-2).

The policy also stresses the need for higher educational institutions to seek non-state funding such as private sector investment or self-generated income to fund the HE system in the

country. According to a highly placed official in the Ministry of Higher Education (MoHE), new state universities are unlikely to be established in the near future as a means of expanding HE opportunities (Box 7-1).

We, the government want to give prominent [sic] to distance education as a low cost answer to our existing problem. But we have not achieved our results. But we think in the future that it will be the answer. Because we cannot invest in [a] conventional university system any more. [...] The government as a policy has decided that in the next four to five years we will not be expanding the number of universities. So we have to... well it is a constant and others we have to find as alternatives.

Box 7-1: A Highly Placed Official at the MoHE

Therefore alternative modes of HE, especially distance mode, are promoted on the island, especially for the young people who aspire to pursue a HE degree course. State universities, currently the largest providers of university education in the country, are encouraged to utilize existing resources to the maximum by offering external degree (ED) programmes.

As discussed in Chapter 2, the state university system in Sri Lanka is fully funded by the government, with the exception of the Open University of Sri Lanka (OUSL). Extending educational opportunities through the conventional system therefore puts a great strain on a budget that is already stretched. Charging a fee, however small, to enter the conventional university system is likely to be vehemently opposed by student movements and opposition political parties because they view it as a threat to the concept of “Free Education”, which provides the opportunity for a student from any social background who performs well in the GCE A/L examination to access free state university education. Alternatively, OUSL and ED programmes offered by conventional universities have always charged a fee. Extending HE opportunities through these two methods (both using DE) is thought to be cost effective for the government as the students themselves bear at least a portion of the expense. In fact, DE has been used as a way of increasing recruitment and “shifting the balance of expenditure on education away from the state and towards the learner” (Harry and Perraton 1999, p3). Sri Lanka’s investment in HE is under 0.5% of the GDP, and Uturupane, Millot et al. (2009) claim that Sri Lanka’s public expenditure in education is below the South Asian average. Further, the state university system in Sri Lanka is faced with a severe shortage of libraries, laboratories, computers and other materials required for quality teaching and learning (Chandrasiri 2003). Demands of national security, foreign debt service and health care have forced the government to divert its resources elsewhere (Chandrasiri 2003). The scarcity of

available funds for extending HE opportunities is one of the main claims advanced by the government to justify the selection of DE as the means to extend access to university education. In fact, this reasoning has also been used by educators elsewhere (Rumble 1997; Hulsmann 1999; Perraton 2000) who want to run

education with too little money; open[ing] doors to new groups of students; raise[ing] the quality and standard of education; expand[ing] numbers [information in brackets added] (Perraton 2000, p2).

7.2.1 Government Initiatives and Rationale for Introducing ICTs

1.

- a. What is the government rationale for introducing ICTs to undergraduate DE programmes and which initiatives have been introduced?

The Sri Lankan government has placed great value on Information Technology (IT) as a tool for creating a Knowledge Society (KS), naming 2009 the “Year of English and IT” (Rajapaksha 2009). The UN Millennium Development Goals (MDGs) also emphasize the need to provide the benefits of new technologies to the general public. The 8th MDG aims at developing a global partnership for development. In Sri Lanka a number of targets have been defined under this goal. For example, the national Target 16 is to develop and implement strategies for decent and productive work for youth, and national Target 18 is to make available the benefits of new technologies to all especially ICT (National Council for Economic Development n.d). In order to achieve these targets the government is implementing measures to reduce unemployment and under-employment of youth, as well as to extend access to ICTs for all sectors of society.

The Government of Sri Lanka has also initiated a project - IRQUE (Improving Relevance and Quality of Undergraduate Education) that it is hoped will ensure university graduates’ effective contribution to economic development through improved employability. Even with this effort, as discussed in Chapter 2, it was observed that unemployment was high amongst ED graduates. For example, the Minister of Higher Education made the following comments at an academic seminar organized by the University Grants Commission (UGC):

I propose to make a couple of criticisms of the external degree programmes, which in the last two decades have become mills, churning out graduates who are neither competent nor employable. [...] [T]he external degree programmes, largely because of their poor quality, have created a social situation where we see a volatile group of degree holders seeking employment. It is this deficiency in the entire system of external degrees which need investigation as corrective measures have to be taken to

prevent the system deteriorating further, resulting in the production of shallow, non-intellectual and half-baked graduates who do not fit into any position in a highly competitive global-oriented labour market (National Centre for Advance Studies in Humanities and Social Sciences 2008).

As discussed in Chapter 2, there were several issues with the state university ED programmes:

- little or no support from the educational institution for external students
- high failure rates
- not targeting the disciplines in demand
- external graduates lacking skills to be competitive in the labour market

The UGC's intervention with a policy framework, which was also discussed in Chapter 2, was an effort to address these issues. In contrast to the Sri Lankan situation where ED graduates were said to be unemployable, the Open University of the UK was found to be producing the most employable graduates while utilizing distance mode (The Open University of United Kingdom 2009). Understanding of English and computer skills have become essential for employability, along with skills acquired in learning with new technologies (Engler 2000); thus the UGC is in the process of introducing English and computing as compulsory components in ED programmes (The Official Government News Portal of Sri Lanka 2011).

As discussed in Chapter 4, the Distance Education Modernization Project (DEMP) has been the major contributor to the development and the use of ICTs for DE in Sri Lanka. Through an emphasis on ICTs as a delivery medium it is also hoped that better utilization of the scarce human resources in Sri Lankan academia can be achieved; for example, many state universities established far from Colombo are struggling to attract senior academics for permanent positions (Box 7-2), but with the use of ICTs it is possible for academics from universities in Colombo to deliver lectures to these remote students.

Face to face has a problem, because [...] most universities do not have adequate teachers. You know, most of the universities depend on visiting lecturers. [...] Like Rajarata University and Sabaragamuwa University they don't get proper lecturers. They [lecturers] don't want to go there. Even a professorship they will not accept because they can't send their children, they have to send their children to Ratnapura or somewhere [for schooling].

Box 7-2: A Highly Placed Official at the MoHE

The effort to extend educational opportunities through DE, utilizing ICTs, is consistent with the government's e-Sri Lanka initiative. The introduction of Nanasala telecentres and the establishment of computer laboratories in secondary schools were two of the major infrastructural investments made in order to increase IT literacy among Sri Lankans. These projects are claimed to have raised IT literacy in Sri Lanka from a mere 9.7% in 2004 to 22% in 2008 (Riley and de Silva 2009). However, these statistics were published by the Information and Communication Technology Agency (ICTA) of Sri Lanka, the implementer of Nanasala project and are yet to be objectively verified by the Department of Census and Statistics through a national census.

As stated earlier, cost reduction is one of the compelling reasons for the selection of DE as an alternative to conventional HE. The introduction of ICTs as a delivery medium for DE programmes is also expected to further reduce costs, both to the institution and to students. The BRIDGES [Basic Research and Implementation in Developing Education Systems] research project comprised several interrelated sub-projects on education systems in developing countries. One research project (Tatto, Nielsen et al. 1993) compared the effectiveness and costs of three approaches: pre-service, conventional in-service and distance mode in-service for teacher training in Sri Lanka. In comparing costs the research considered costs borne both by the sponsoring institution and the teachers. The distance mode of teacher training was the most cost-effective of all; however, teachers who had pre-service training were significantly more effective in terms of the high achievement of their pupils in mathematics and language. Chandrasiri (2003) and Loxley, Ho et al. (2003) have also reported on the cost-effectiveness of DE, particularly the OUSL programmes.

Even though DE in these situations had been a cost-effective solution for Sri Lanka, the programmes that were researched did not utilize ICTs for delivery. Contemporary DE programmes are using ICTs and their cost structures, as discussed in Chapter 4, are different to those of pure print-based DE programmes. Therefore, the actual costs involved are difficult to estimate with reference to previous programmes (Mason 1999). It was observed that officials perceived online DE to be a cost-effective solution, but evidence is anecdotal. For example, see the interview extract in Box 7-3.

Online and distance education mode will be utilized for more programmes and we are experimenting with it for some other courses and we are encouraging and we are going to do that more and more. Distance education based components, modules are being implemented to allow more students to follow and to also cut the cost and [...] students can learn from their own places, they have access through computers to the course material - so we are in the process of development.

Box 7-3: A Highly Placed Official at the UGC

This has been the case elsewhere as well where educators have used Open and Distance Learning to solve problems of resources, access, quality and quantity (Harry and Perraton 1999; Perraton 2000).

Despite heavy investment in ICTs for DE, an impact analysis study was not conducted to assess these newly introduced programmes (Box 7-4).

Programmes started in 2007 or 2008 maybe and there were no programmes that had finished at least one cycle to be taken for impact analysis, or reviews before the DEMP itself ended. After the project there is no one responsible to do that. Cabinet is looking at a national board for this, once that comes in this will be done. Impact analysis has not been done.

Box 7-4: A Highly Placed Official at the DEMP

As the DEMP has now been dissolved, it is unlikely that the new interim board (under the MoHE), which is already struggling to maintain the NODES (National Online Distance Education Service) within the funds available, will invest resources on an impact analysis of the project.

7.3 Summary

The government of Sri Lanka, in an effort to develop its human resources, has formulated a new policy framework to address the needs of the higher education system of the country, which has prioritized the expansion of higher education using multiple modes of delivery. Despite the efforts to improve the quality and relevance of undergraduate education, it was observed that external degree students who received minimal support from their institutions were at a disadvantage.

In parallel with and similar to its e-Sri Lanka e-government initiative, the government has promoted ICT as a delivery medium for university education through the implementation of the Distance Education Modernization Project with a vision to better utilizing scarce human resources, provide more places for higher education, and to improve the employability of graduates while reducing educational expenditure.

8 Data Presentation, Analysis and Discussion – Case 1 – Orange Valley University

8.1 Introduction

In this chapter and the following chapter, two case studies and their implementation of distance educational delivery through ICTs are presented and discussed. Within each case study, research questions are posed and answered systematically.

The case of Orange Valley University (OVU) is discussed in this chapter.

8.2 Background

1. How have ICTs been introduced to undergraduate DE programmes in contemporary Sri Lanka?
 - b. How have these been implemented by the state universities providing DE undergraduate degree programmes?

OVU is a leading technology education provider in Sri Lanka. It provides a wide range of undergraduate and postgraduate degrees in technological fields through the English medium. OVU had been a conventional university delivering its programmes only in-person and accounting for about 1/12th of undergraduate enrolments (University Grants Commission Sri Lanka n.d.). The government's encouragement to extend HE opportunities, high demand for OVU IT graduates, and start up support provided by the Distance Education Modernization Project (DEMP) to conventional universities venturing into Open and Distance Learning (ODL), have provided the impetus for OVU to offer its programmes in distance mode. This happened despite the strong resistance of its internal students claiming that the introduction of fee-levying DE programmes in state universities was a threat to the "Free Education" policy of the country.

8.2.1 Distance Education

With the establishment of its Centre for Distance Learning (CDL) to facilitate administrative and other academic support services for study programmes offered in distance mode, the OVU became a dual mode university. Currently the University offers a Bachelor degree in

ICT discipline in distance mode. (Note: The University offers a similar degree internally. All reference to OVU students refers to those registered in the DE programme).

The University offers three options of study for students who wish to engage in the DE programme: independent study; study with online tutorial support from the CDL; and study with a partner organization – for students preferring conventional classroom setting with a University-approved partner institution. At the time of writing, there were 2 partner organizations, with branches in Colombo, Jaffna, Kandy, Galle, Negombo and Kurunegala, providing services to students. However, students from other districts have to travel long distance to attend these classes; for instance, a student living in Batticaloa will have to travel more than 125km to attend classes (the areal distance between Batticaloa and Kandy is around 125km).

Students registering for a course with the CDL are automatically registered with the NODES (National Online Distance Education Service), which allows them access to state-of-the-art computer and connection facilities at the NODES Access Centres (NACs) around the country. The University pays Rs.15,000 (about £85) per annum per student for the NODES passed on to the student in their fees (Personal Communication, Anonymous 2010). At the time of writing, the fee for the course was Rs.200,000 (about £1100) with an instalment plan available, which would increase the amount payable by Rs.15,000 (about £85).

The degree programme is designed to facilitate multiple entry and exit points to allow flexibility. The workload is divided into three levels: Level 1 – Certificate, Level 2 – Diploma and Level 3 – Degree. Each level consists of two semesters of 14 weeks duration each plus an examination period. Even though lateral entry is allowed, at the time of writing no equivalent qualifications had been approved for entry into higher levels (Level 2 or 3) of study. The minimum entry requirement is the same as entry to state universities, but in order to limit numbers, the University also instituted its own entrance test. However, a review of the programme has recommended the abolition of this test in order to allow opportunities for more students to register on the programme.

8.2.2 Course Development and Delivery

Course materials for this sole distance mode degree offered by the University are prepared in several stages. A senior academic is appointed as the course chairperson, and if possible s/he

is also appointed as the examiner for the course modules. The course chairperson is supported by a team of course writers usually consisting of junior academics in the University. This team prepares the expected learning outcomes on a weekly basis with performance indicators, and produces a weekly plan for a given module. An internal reviewer is appointed mainly to consider pedagogical aspects. After the initial lesson plan is evaluated and feedback incorporated, the next stage is the preparation of activities such as discussion topics and assignments, followed by the actual content development. A module coordinator is appointed for each course module, responsible for the administrative aspects of the module.

OVU's DE course development has faced many challenges. For example, as lecturers in Sri Lankan state universities are accustomed to having complete or almost complete control over their in-person taught modules, they did not welcome the idea of a pedagogy expert reviewing their course writings (Box 8-1). Despite such challenges the CDL team were able to successfully implement the OVU's first online DE programme.

When we teach face-to-face somebody it is one person show that they are the expert on everything. They go to the class and teach and nobody asks questions about how or what are you teaching. Here it was the issue because whenever there is a team people do different things you can't do everything. Then people who would normally have authority have a little bit of issue dealing with that. When they were told that somebody will look at your thing [course materials] and give comments, some senior people were not sure whether we should have that kind of a thing. But it was later clarified.

Box 8-1: A Highly Placed Official at the CDL

Tutors are employed by the CDL to provide online learning support to students. The examiners' and module coordinators' identities are hidden from students and tutors by assigning generic names in the Learning Management System (LMS). Students contact tutors for all their queries; in answering student queries, if in doubt, tutors can seek advice from the lecturer/examiner and the result will then be reported to the query initiator (student) by the tutor. In case there are delays in this communication flow, the module coordinator intervenes.

All course modules are delivered online through Moodle™-based LMS. Most administrative activities such as student registrations and subject selection/registration are handled through a web-based system. Once registered for a particular module a student is able to view the weekly lesson plan and related resources through the LMS. Resources provided can be in the

form of lecture notes, slides, animations, videos, external web links, Wikis and discussion forums. Online quizzes are a component of the evaluation process and they are automatically graded. All assignments are submitted digitally, and marks are also posted on the LMS. Online discussion forums and chat sessions are available to allow knowledge construction. Community building through mutual help is facilitated by a “Help Wanted” forum where all students registered on the OVU DE programme have access to post messages.

8.2.3 Summary

With the DEMP assistance, OVU ventured into DE with the introduction of this undergraduate DE degree programme. It offers three options: independent study, registering with a partner institution, or online study supported by online tutoring. The discussion here is based on the university’s offering of online study with online tutorial support.

This programme is delivered via an LMS and its materials are exclusively designed and developed for distance delivery. The CDL (Centre for Distance Learning) administers the programme and provides tutorial support for students via online tutors employed by the centre.

8.3 Student Perspective

This section explores the OVU DE programme’s students’ perspectives of ICT-enabled DE.

2. How are these initiatives perceived by the students on DE undergraduate degree programmes?
 - c. What ideas and beliefs do students have about the introduction of ICTs to undergraduate DE degree programmes?

8.3.1 Why Introduce ICTs

OVU’s DE programme is conducted fully online and students are required to log in to the LMS regularly. Even though students were engaged in an online learning environment, their views of ICT for DE showed marked variation. For example, they suggested various reasons for the introduction of ICTs by educational institutions. As can be seen in Figure 8-1, there was a general agreement that ICTs allowed learning materials to be made available all the time. About 75% agreed that ICTs allowed enrolment by disadvantaged students; about the

same percentage agreed that ICTs reduced costs. Respondents who disagreed stated that ICTs have introduced new costs to students such as material printing costs and Internet connectivity charges (Box 8-2, Box 8-3). This fits with concerns expressed by Perraton (2000, p145):

[t]here is a danger that distributing materials electronically merely shifts the costs from producer to user and results in the user having an inferior version of the material.

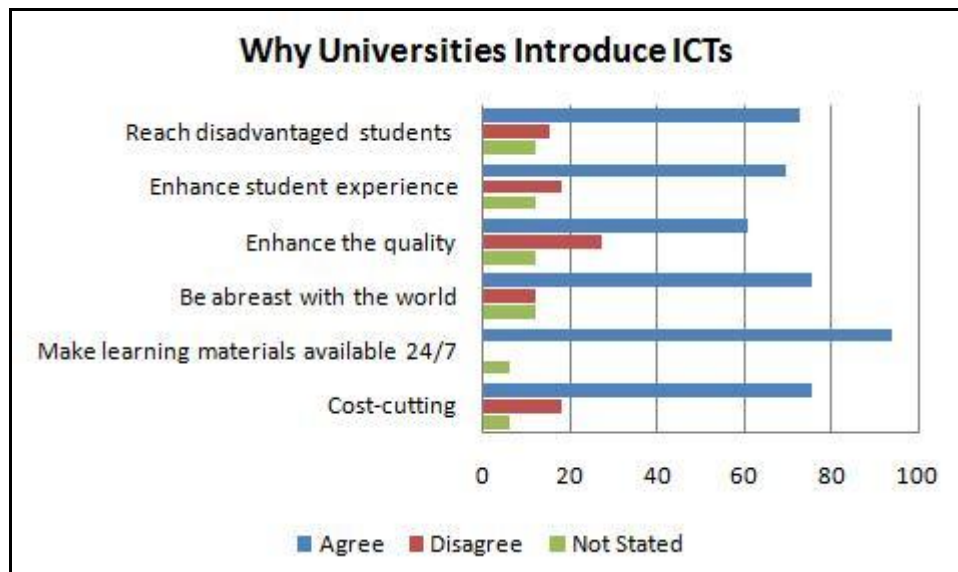


Figure 8-1: Why Universities Introduce ICTs

It is costly to print books, that printing cost can be minimized. If you go online and use PDFs the printing cost could be reduced. [...] But it costs us much more than the cost borne by the university to print a book when we take PDF printouts from somewhere. I mean when taking printouts individually [...] Therefore, we don't think their goal [cost reduction] was achieved. It cost us much more to take printouts individually. But there was one advantage for working students as they were able to take printouts from office using used papers.

පොත් ප්‍රින්ට් කරන්න වගේ වියදමක් යනවනේ, එතකොට ඒ ප්‍රින්ට් කොස්ට් එක වගේ අඩු කර ගන්න පුළුවන්. ඔන්ලයින් ගිවිල්ලා පී.ඩී.එෆ්. වගේ යුස් කලොත් ප්‍රින්ට් කොස්ට් අඩු කර ගන්න පුළුවන්. [...] සමහර විට යුනිවර්සිටි එකෙන් පොතක් ප්‍රින්ට් කරලා දෙනවට වැඩිය වැඩි වියදමක් අපට යනවා. පී.ඩී.එෆ්. ඒකත් කොහෙන් හරි ප්‍රින්ට් අඩුවි ගන්න. ඒ කියන්නේ තනි තනිවම ප්‍රින්ට් කරන්න ගියාම [...] ඒක නිසා අපි හිතන්නේ නෑ ඒ ගොල්ලන්ගේ ඒක අවිච්ඡිද්‍ර නා කියලා. ප්‍රින්ට් කොස්ට් එක අපට තනි තනියම ඊට වැඩිය ගොඩක් ගියා. හැබැයි එක වාසියක් තිබුණා. වර්කිං ස්ටුඩන්ට්ස් ලට ඔෆිස් එක ගානෙ යුස්ඩ් ජෙපර්ස් දාලා ප්‍රින්ට් කර ගන්න වගේ.

Box 8-2: Nirodha-24Y-M-Colombo

We don't have classes and that is why the charge for the course is less. We pay nearly Rs.500,000. I think if classes are added to this it will cost the same as the other degrees [...] Resources given in the course are not enough for us. It is difficult for us to find books too. The only option is to access Internet to find information and it costs a lot to get Internet facility [...] Can't expect a reduction in cost. It is just that we can save time, I mean we can work at a time convenient for us, we can even access [the LMS] at night and work

අපි ක්ලාසස් යන්න නැති නිසා තමයි අපේ ගණන අඩුවෙලා තියෙන්නෙ.අපි නියර්ලි ලක්ෂ 05 ක් වගේ ගෙවනවා. මං භිතන්නෙ ක්ලාසස් මේකට ඇති වුණොත් අනික් සිල්ලස් වගේම වෙයි. [...] අපට කෝස් එකේ තියන රිසෝසස් ගොඩක් දුරට මදි වෙනවා. අපිට දැන් පොත් පත් එහෙමත් හොයාගන්න අමාරුයි. ඒක නිසා ඉන්ටනෙට් එක ඇක්සස් කරලා තමයි හොයාගන්න වෙන්නෙ. ඒක නිසා ඉන්ටනෙට් වගේ පහසුකම් වලට ගොඩක් වියදම් වෙනවා [...] වියදම අඩුවීමක් නම් බලාපොරොත්තු වෙන්න බැහැ. අර අපේ කාලය ඉතිරි ඒ කියන්නෙ අපට පහසු වෙලාවක මේකෙ තියන වැඩ කටයුතු කරන්න ඒ කියන්නෙ රැටි වුනත් අපිට ඇක්සස් කරලා ඒකෙ වැඩ කටයුතු කරන්න පුළුවන්. [...]

Box 8-3: Arjuna-23Y-M-Colombo

The respondents who agreed that ICTs have reduced costs emphasized the reduction in expenditure on travelling and accommodation (Box 8-4).

Staying in a boarding house in Colombo to follow a 3 year degree would cost more than this.

කොළඹ ඇවිල්ලා බෝඩිමක නැවතිලා අවුරුදු 3ක සිල්ලස්ස් කරනවා කියන්නෙ මීට වැඩිය කොස්ට් එකක් යන්න පුළුවන්.

Box 8-4: Shanil-29Y-M-Badulla

The respondents who disagreed on ICTs improving access for disadvantaged students argued that students in rural areas were less likely to have physical access to computers and the Internet (Box 8-5).

Not everybody has Internet. At the current rates, it is only ADSL that many can afford. I don't think even ADSL is used by many students in villages. There is no 3G coverage in those areas. Such communication difficulties exist. Then again, I don't think many students even have the equipment required, even computers. I mean, in Galle these may be available. But if you think of rural areas like Mahiyanganaya, Jaffna or Ampara, the students would not have those facilities.

ඉන්ටනෙට් නෑ. අරෙහෙ මෙහෙ නැහැනෙ. ගොඩක් කම්පියට ඒ.ඩී.එස්.එල්.කමයි තියෙන්නෙ දැනට ගන්න පුළුවන් මට්ටමක. ඒ.ඩී.එස්.එල්. පාවිච්චි කරන්නෙත් මංනං භිතන්නෙ නෑ ගොඩක් දෙනෙක් පාවිච්චි කරනවා ඇතියි කියලා ගම්බද ළමයි. 3G කවරේජ් එකක් ඇත්තෙම නැහැ ඒ පැති වලට ඉතිං ඒ වගේ අපහසුකම් තියෙනවා. සන්නිවේදන අපහසුකම් තියෙනවා. ඊට පස්සෙ මිය උපකරණ. මං භිතන්නෙ නෑ ඒවා තියනවායි කියලා. කම්පියුටර් එකක්වත් පාවිච්චි කරන්න ඒ කියන්නෙ මේ ගාල්ලෙ ඇති. නමුත් මිය හිතුවොත් මහියංගණය, යාපනය, අම්පාර වගේ දුෂ්කර පළාත් වල ළමයිනිට ඒ පහසුකම් නැහැනෙ.

Box 8-5: Himali-28Y-F-Galle

About 60% of the respondents agreed that ICTs enhanced quality; 28% disagreed stating that the content they received in PDF format was copied from “unreliable sources” such as Wikipedia®; for example, Shanil expressed contempt for the notes provided when he found that they had been taken from Wikipedia® (Box 8-6). As such these students did not believe

that ICT use had enhanced quality and it was felt that it would not have happened if the course provided teaching materials such as books. Thus ICTs were seen as causing quality reduction. In contrast, a study by the journal *Nature* found Wikipedia® to be at least as accurate as *Encyclopaedia Britannica* (Giles 2005); however academic communities are reluctant to accept user-generated content such as Wikis and blogs. Mozelius and Htakka (2009), observing a different Sri Lankan university's eLearning content development, have also reported instances of content developers using modified web content. Re-use however, can be good or bad; if used well it can lead to better materials being produced. For example, as discussed already in Chapter 3 and 4, MIT OpenCourseWare is a resource base that can be used by anyone developing content.

<p>Most of the time our notes are taken from Wikipedia. When we refer the Wikipedia what we find there is our note in its entirety. There also a plagiarism has happened. We had an assignment on 'How web works'. We first search[ed] the Internet. When reading through it looked very familiar. It turned out to be the same as what we were given as a note. Only the font was different. <i>To get a note that is there in the Wikipedia we don't have to do a degree, do we</i> [Emphasis added]</p>	<p>ගොඩක් වෙලාවට අපේ නෝට්ස් තියෙන්නෙ විකිපීඩියා එකෙන් ගත්තු ඒවා. විකිපීඩියා එක රිපර් කරන කොට අපේ නෝට්ස් එක එහෙම පිටින්න තියෙනවා. එතනත් ප්ලේජරිසම් එකක් වෙලා. අපිට අසයින්නේ එකක් තිබ්බා How web work කියලා. ඉස්සෙල්ලම කරන්නෙ ඉන්නෙ එකේ සර්වි කරන එක. ඒක කියවගෙන යනකොට හරිම පමිලියර්. බලනකොට අපේ නෝට්ස් එකට ඒකමයි තියෙන්නෙ. ගොන්නේ එක විතරයි වෙනස්. ඉතිං විකිපීඩියා එකේ තියන එක නෝට්ස් එකක ගන්නනම් අපි ඩිග්රීස් කරන්න ඕන නෑනෙ.</p>
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Box 8-6: Shanil-29Y-M-Badulla

8.3.1.1 ICT as a Communication Tool

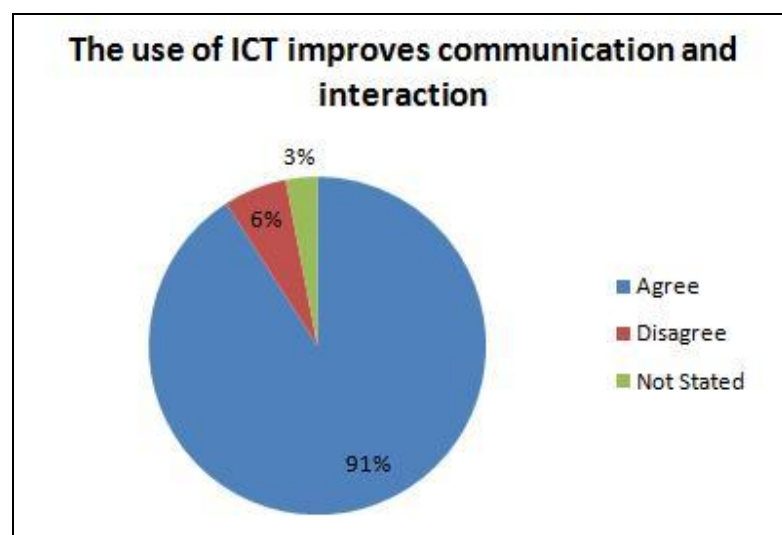


Figure 8-2: ICT as a Communication Tool

As can be seen from Figure 8-2, the majority of respondents (91%) agreed that the use of ICTs improved communication and interaction; only 6% disagreed. One respondent mentioned that if ICTs (especially telephones) were not so commonly used, one would more often meet one's friends, and therefore disagreed that ICTs improved communication and interaction. When asked about their specific experience with ICTs as a communication tool in their study programme, 82% of the respondents agreed that ICTs have improved their interactions with others in the course. Respondents' experience with ICTs as a communication tool to interact with their lecturers varied widely. As can be seen from Figure 8-3, only 52% agreed that ICTs have improved their interactions with course lecturers.

Generally with the use of emails and discussion forums it is expected that students' interaction with course lecturers would increase. In practice, despite the majority of respondents (82%) agreeing that ICTs had improved their interaction with others in the course, their interactions with lecturers did not seem to be facilitated by ICTs. This contradiction was explored further to identify reasons for such an observation.

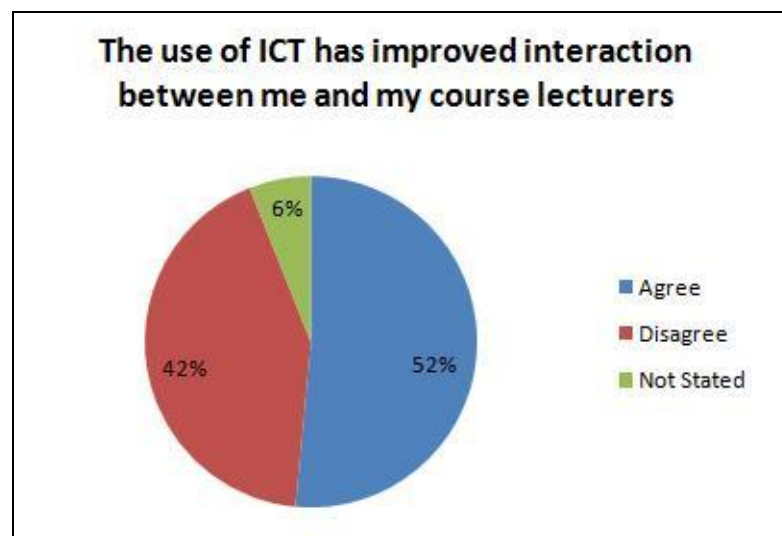


Figure 8-3: ICT to Interact with Lecturers

Tutors recruited by the CDL were the only contact point for students for their queries. Therefore the students rarely communicated with lecturers. On the other hand, students in general were not happy with the tutors' role in their programme; the protocol of tutors contacting lecturers on behalf of students, was not appreciated by students. Shashika described her experience:

I mean when we ask them a question [...] if they can answer and without saying 'I will get back to this particular person and I will check with this person and will get back to you' without saying all that if they can give the answer I mean the tutors itself can give the answer I think it will be much better. They always say we will check with the [sic] who is in charge of the course I don't know what they call, we will check with them and get back to you. Most of the time it is like that. We will get back to you, check and get back to you

Box 8-7: Shashika-29Y-F-Colombo

Students could not contact their lecturers directly and this was evident from Nirodha's quote in Box 8-8. Thus, the students disagreed with the statement that ICTs have improved their communication and interaction with their lecturers.

<p>When we ask a question from tutors they tell us that they will ask from relevant field lecturer and will tell us. But sometimes it takes a week or even two to get the answer. By that time we will have somehow solved our problem. I don't know how practical this is because those lecturers may have work with internal students as well. But at least if we had the possibility of dealing with lecturers through email it would have been alright.</p>	<p>අපි විදුර්ජල ගෙන් යම් ක්වෙස්ටන් එකක් ඇහුවම එයාලා අදාල ෆීල්ඩ් ලෙක්චරර් ගෙන් අහල කියන්නම් කියලා තමයි අපට කියන්නේ.එහෙම කියලා සමහර වෙලාවට සුමානයක් දෙකකට පස්සෙ තමයි උත්තරේ ලැබෙන්නේ.එතකොට අපි ඒ ප්රශ්නය නිරාකරණය කරගෙන ඉවරයි.එහෙම නැතුව මම දන්නෙ නැ මේක කොච්චර දුරට ප්රායෝගිකද කියලා ඒ ඒ ලෙක්චරර්ස්ලාට ඉන්ටර්නල් ස්ටුඩන්ට්ස්ලාගෙ වැඩක් ඇති.එහෙම නැතුව අපිට අඩුගානෙ රිමේල් කර් කරලෙක්චරර්ස්ලන් එක්ක ඩිල් කරන්න හැකියාව ලබා දුන්න නම් හරි.</p>
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Box 8-8: Nirodha-24Y-M-Colombo

It was interesting to see why respondents had such strong views on the demarcation between lecturer and tutor. Lecturers were employed by the University and students believed them to have superior academic qualifications. Tutors on the other hand, though they possessed good honours degrees from reputable universities, were employed by the CDL, an institution which students did not consider to be prestigious. Tutors frequently wanting to contact the lecturer before responding to student questions gave the impression that they were not competent in the subject matter.

Regarding the issue of late response and not being able to contact lecturers, students also complained that they did not receive proper feedback for assignments (Box 8-9).

<p>No feedback for assignments. They give lesser and lesser feedback each day. Now we are in the last or the 6th semester, and it [assignment feedback] has lessened gradually to a point that now we do not get feedback at all. We don't even get marks. Only after publishing the eligibility [to sit the exam] list do they give the marks. That is totally wrong.</p>	<p>අසයින්නන්ට් ෆීඩ්බැක් නැහැ.එන්න එන්නම අඩුයි.ඒ කියන්නෙ දැන් ගත්තහම මුල ඉඳලා ඒ කියන්නෙ අපි දැන් ඉන්නෙ මේ අන්තිම සෙමෙස්ටර් එකේ හයවන සෙමෙස්ටර් එකේනෙ. මුල ඉඳලා ඒක ග්‍රැජුවලි එන්න එන්නම අඩුවුණා.ඒ කියන්නෙ අසයින්නන්ට් එකකට ලැබෙන ෆීඩ්බැක් එක එන්නෙම නැ.ලකුණක් නැ අන්තිමට.අන්තිමට එලිපිබිලිපි ලිපිපි පබ්ලිෂ් කරලා ඉවරවෙලා තමයි ලකුණු දෙන්නෙ.ඒවා ලොකු වැරදි.</p>
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Box 8-9: Chandrasiri-32Y-M-Colombo

Himali who lived very close to the Engineering faculty of University of Ruhuna paid for private tuition from lecturers and students of that university when she had difficulties with the subject matter, instead of requesting help from the tutors (Box 8-10).

When there are subjects that I find difficult such as Maths I arranged to get tuition from a student specializing in Maths. Once I got help from a lecturer of Engineering of this university [University of Ruhuna] [...] Many of the questions that one has can be solved through Internet forums, there are so many of them.	මට අමාරු සබ්ජෙක්ට්ස් වලට මැත්ස් වගේ ඒවාට අර ස්පෙෂල් කරන ස්ටුඩන්ට්ස් ලා ගෙනෙන ගෙන ඉගෙන ගන්නවා පිටින්. ඒවටම ස්පෙෂලයිස් අය ඉන්නවනේ. ඒගොල්ලො මේ යුනිවර්සිටි එකේ [University Of Ruhuna] ඉංජිනියරිං කරන ලෙක්චරර් කෙනෙක් එකපාරක් අහගත්තා. [...] තියෙන ප්‍රශ්න ගොඩක් දුරට ඉන්ටනෙට් එකෙන් සෝල්ව් කරගන්න පුළුවන් ගොඩක් ෆෝරම්ස් තියනවානෙ.
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Box 8-10: Himali-28Y-F-Galle

From the above discussion it can be seen that students wanted or expected a lot of interaction with their lecturer/tutor. This is consistent with the findings of Owatson, Garrison et al. (2006). When faced with difficulties in understanding materials, and the tutoring system did little to support them, students turned elsewhere to find an ‘expert other’ for help. This suggests that students valued interactive experience in learning. They achieved much more with the help of an ‘expert other’, suggesting that they were benefiting from the interactive style of learning suggested by Vygotsky (Mooney 2000).

About half of the respondents have contacted tutors, and have clearly stated on the questionnaire that they had contacted tutors not lecturers. In fact, a respondent had written “we are not allowed to” on the questionnaire pointing at the question that asked whether they have used ICTs to contact their lecturer. 48% of respondents had contacted administrators, marginally higher than the number who had contacted tutors (43%), using ICTs. The majority only used MoodleTM to contact course administrators while tutors were also contacted by email.

Respondents were given the opportunity to rate their preferred method of communication to contact fellow students in the programme – 1 for the most preferred, 2 for next and so on. The questionnaire listed 5 methods of communication and provided space for any other; responses received are summarized in Table 8-1.

Table 8-1: Preferred Communication Method

Method of Communication	Preference (Rank)				
	1 st	2 nd	3 rd	4 th	5 th
a. Phone (SMS or telephone call)	10	4	7	3	2
b. Email	6	10	6	5	
c. Social networking sites (Facebook, Twitter, Yahoo or Google Groups)	6	8	2	6	2
d. Moodle discussion forums	7	6	4	6	2
e. Meeting them face to face	1	1	6	3	9
f. Other					

Using the telephone was the most preferred method of communication among the respondents while email ranked second. MoodleTM forums and social networking sites were also used but with lower preference. The least preferred method was meeting in-person. By combining communication via email, social networking sites and MoodleTM discussions into the generic category ‘computer mediated communication’ (CMC), it can be seen that the first preference of 64% of the students was CMC. This result is hardly surprising because the students were following an online course and had ready access to phones, computers and the Internet; on the other hand, to meet a fellow student in-person they would have to arrange a meeting as the course does not conduct face-to-face classes on a regular basis. During interviews it was revealed that telephone communication was preferred because it allowed them to solve matters through a single telephone call rather than sending emails back and forth.

As shown in Figure 8-4, 28 respondents (85%) agreed that ICTs were helping them to take part actively in their study programme. However there were 61% who agreed that ICTs as a communication tool was more useful for administrators than for learners. The reason behind this, as revealed by interview participants, was that MoodleTM or email is used by administrators to communicate notices to students; if this was not the case, the administration would have to use the postal service. The use of ICT as a communication tool has reduced the burden on the administrators so it was viewed as more useful for them.

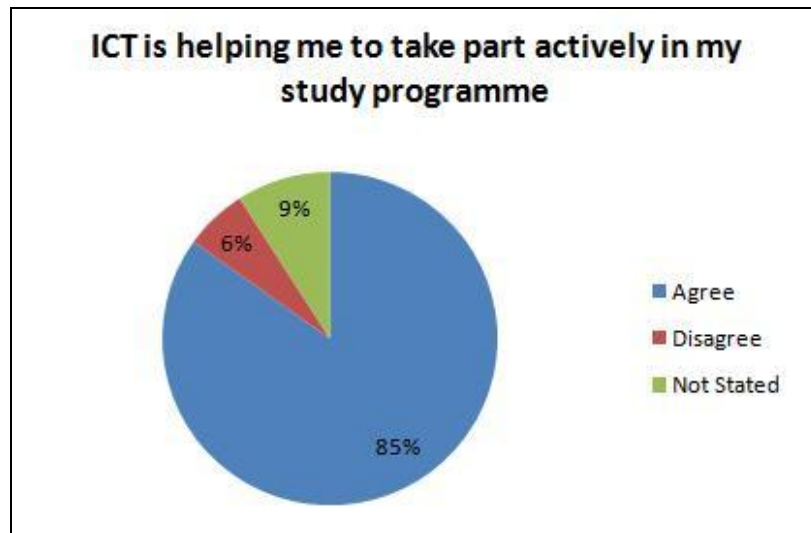


Figure 8-4: ICT for Active Participation

8.3.1.2 ICT as a Tool for Learning

Even though the respondents were engaged in an online degree programme, as can be seen from Figure 8-5, the majority (70%) felt that face-to-face learning was a superior experience. However, 24% of respondents disagreed, and felt that the use of educational technology provided an equal or better experience.

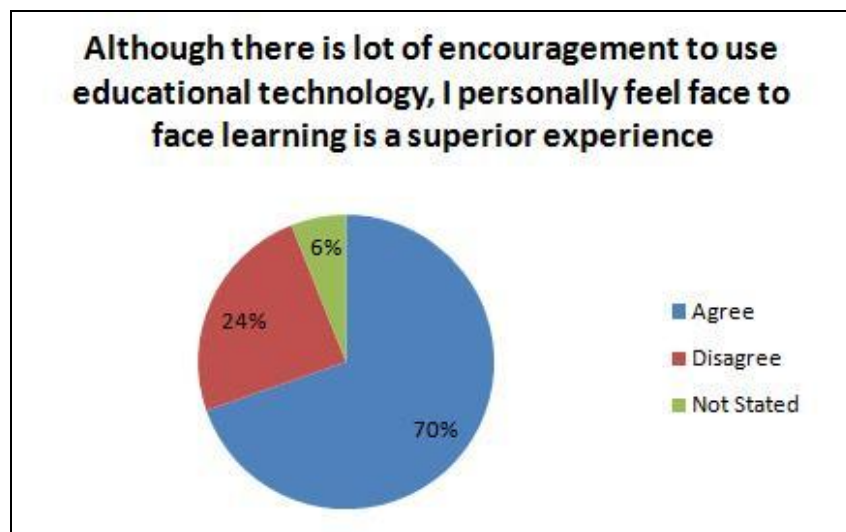


Figure 8-5: Is Face to Face Learning Superior?

Figure 8-6 shows that a large majority of respondents (82%) had concerns about the quality or acceptability of online degree programmes.

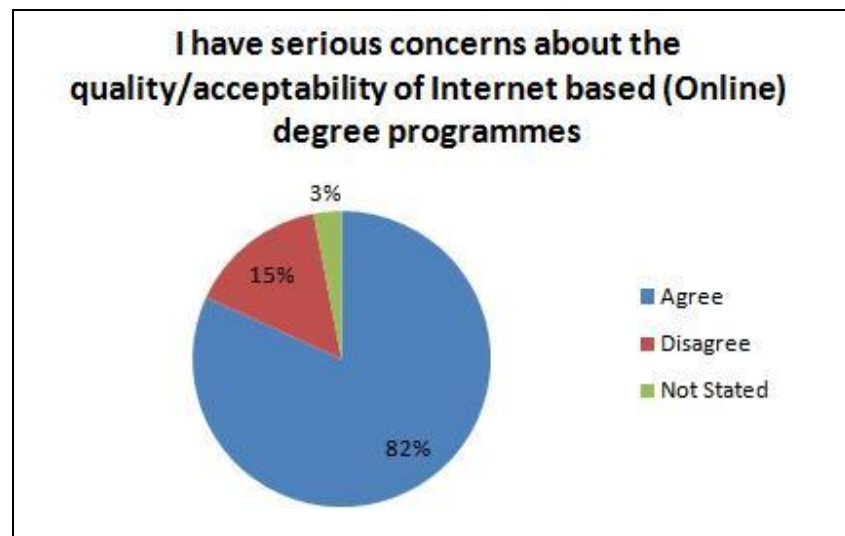


Figure 8-6: Concerns about Quality/Acceptability

This was in fact identified to be one of the issues impeding the spread of DE programmes offered under the DEMP (Box 8-11).

Normally there is a perception that online degrees are not equal to face-to-face mode degree. But it is a myth and we have convinced the people that it is equally recognized

Box 8-11: A Highly Placed Official at the MoHE

As can be seen from Figure 8-7, 82% of the respondents believed that if the same degree programme was offered totally online and in-person, both programmes should receive the same recognition. This result of course contradicts the earlier evaluation by students, where the majority were concerned about the quality/acceptability of online degrees. While these students are on a fully online programme, there is a similar in-person programme offered by the same university. Thus, despite their own recognition of the potentially lower quality of the education provided in DE mode, the students seem to have regarded it as unfair that graduates from courses with identical titles and assumedly similar content should be accorded a different degree of respect.

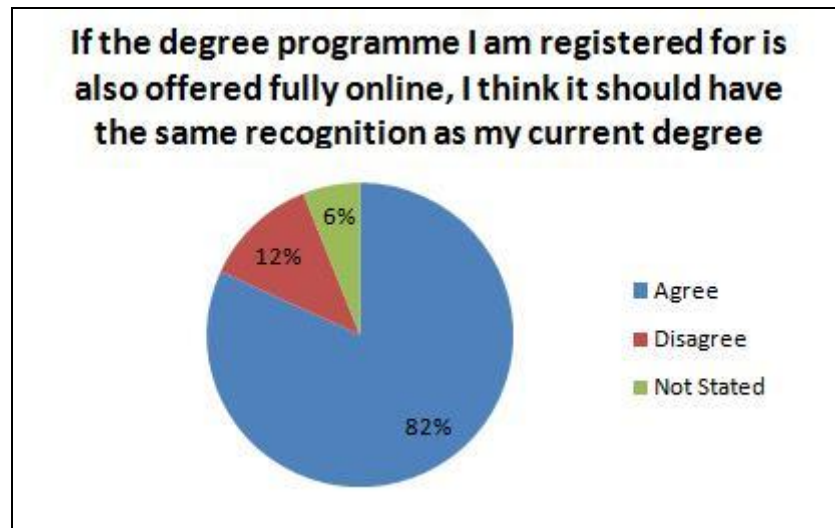


Figure 8-7: Same Recognition for Fully Online Degree Programmes

82% of the respondents believed that using electronic resources for learning was important as they were more up-to-date than books. These students were registered on an IT degree programme; as the knowledge in IT field updates regularly it was felt that solely relying on books was difficult (Box 8-12).

It is not practical to limit oneself to the knowledge found in a set of books. IT is a field that changes every minute, every day. So we should constantly update our knowledge through the Internet. Therefore I find this much more successful than being constrained by bookish knowledge. We are dealing with the world here.	පොත් සෙවීම එකක් දිලා එකට කොටුවෙන්ම බැහැ. අයිටී කියන දේ දවසින් දවස, පැයෙන් පැය අලුත් වෙනවනේ. එක නිසා අපි නිතරම ඉන්ටර්නෙට් එකක් එක්ක අපි නිතරම අප්ඩේට් වෙලා ඉන්න ඕන. එක නිසා මේක ගොඩක් සාර්ථකයි අර පොත් ගොඩකට හිරවෙනවට වඩා එක රාමුවකට මේවා වෙනවට වඩා. ලෝකෙන් එක්කනෙ අපි වැඩ කරන්නෙ
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Box 8-12: Himali-28Y-F-Galle

Himali acknowledges rapid changes in the field of IT and the need to keep abreast with knowledge in the world. Her comment, however debatable regarding the quality of information available on the Internet, suggests some awareness of the importance of lifelong learning. As discussed in Chapter 3, this is essential today as one needs to be competitive in the current labour market of a knowledge-based economy.

58% of respondents agreed that learning with new technology was more fun than traditional methods. However, as Figure 8-8 depicts, there were 21% of students disagreed and another 21% did not state an opinion.

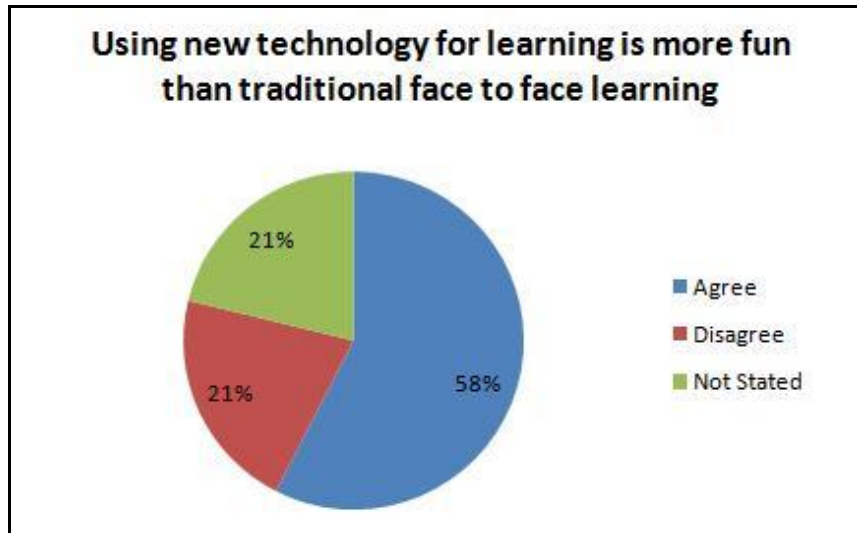


Figure 8-8: Using New Technology for Learning is more Fun

As can be seen from Figure 8-9, more than three quarters of students (76%) agreed that in order to use ICTs for educational purposes a student has to possess a thorough knowledge of computing. Interview participants revealed that when using NACs they faced technical problems, which they were unable to solve themselves. It is possible that this could have influenced their view that a thorough knowledge of computing was necessary in order for a student to use ICTs for education.

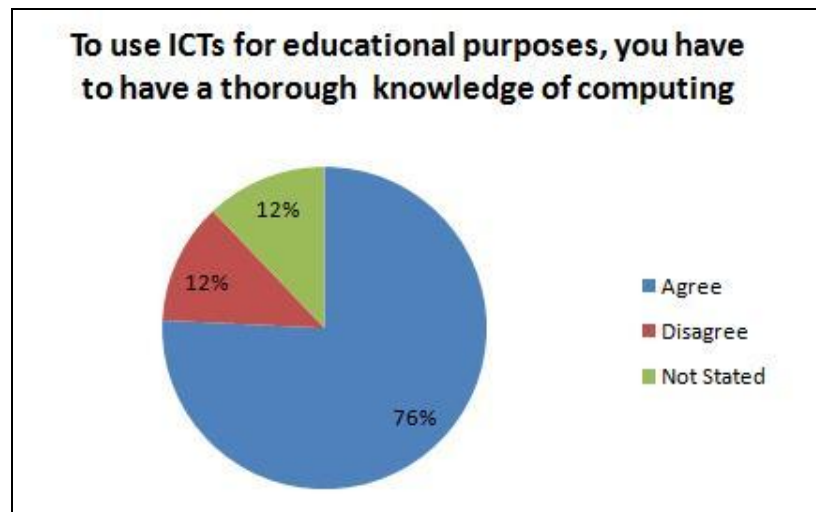


Figure 8-9: ICTs for Education Require Thorough Knowledge of Computing

8.3.1.3 ICTs and Educational Access

Anytime Anywhere Accessibility

Theoretically an online course is accessible to students all the time. Exploring the usefulness of this to the OVU students (Table 8-2) revealed that 88% of students agreed that *anytime* access was required, while 82% of students thought *anywhere* access was required.

Table 8-2: Anytime Anywhere Access (%)

	Required	Not Required
Anytime Access (%)	88	3
Anywhere Access (%)	82	9

Respondents provided reasons as to why anytime and anywhere access was important to them. Some of the reasons given are provided in Table 8-3 and Table 8-4.

Table 8-3: Reasons for Anytime Access

- It gives flexibility to the user
- When we have time we are able to access even at the midnight
- Because it gives flexibility for working students. So students can continue their studies while working

Table 8-4: Reasons for Anywhere Access

- Some students like me follow this programme far away from this centre
- Because at present lifestyle it is not possible to plan staying at same place for 3 years
- That will cut the cost involved to be in a specific place
- In case of travel abroad [sic] [travel abroad] could continue

Despite this positive view held by some respondents, there were others who found it otherwise. There was a respondent who neither attached importance to anytime nor anywhere access. His reasons are provided in (Box 8-13).

It's static material (not dynamic at all) its [sic] good if they give the learning material on a CD (apart from assignments & discussion forums) it reduces the download time & buffering time, time which could be used for studying rather than spending time till it buffers. there's *NO* necessity to access them multiple times unless and otherwise the course materials are dynamic (like discussion forums or site help) [Original emphasis]

Box 8-13: A 23 year-old male student from Gampaha

This respondent's view shows that shortcomings in material preparation (static content) and slowness of the Internet connection were affecting his perceptions regarding the value of anytime anywhere accessibility. This student had a broadband Internet connection at home. However, he seemed to be frustrated with static learning materials as well as the wait to download materials from the Internet. In 1993, Nielsen (1993) established that 10 seconds is

the maximum time that a user can keep attention focused for a response from a computer. When longer delays are experienced, users would engage in other tasks while waiting for the computer's response. A study on browser-loading times of webpages conducted in 12 Asian countries including Sri Lanka reported loading times that were 4 times slower than generally accepted. Furthermore, frequent page-load failures were also observed (Baggaley and Batpurev 2007). Students working on web-based courses would find such regular delays disruptive and intolerable.

Service providers in Sri Lanka market their connections with eye-catching speeds, but most of the time they do not fulfil the expectations; Internet connection quality will be revisited later in the chapter.

Students with family commitments and students who were employed appreciated anytime and anywhere access even though there were issues with connection speeds. Due to their other commitments, many of them would not have registered for this course if it was not an online programme. These views expressed by students can be seen in Box 8-14 and Box 8-15.

<p>This is a little flexible for us. When we want we can log on to Internet and work. [...] I rarely do night shifts. There are some who do night shifts. If you are engaged in some studies you may often get time to do them during the night shift. Then if you have 24 hours access [to the LMS], you can work [study] from office. [...]</p>	<p>මේක ටිකක් අපට ෆ්ලෙක්සිබල්.ඔන වේලාවක අපට පුළුවන් අවශ්‍ය වේලාවට ඉන්ටර්නෙට් එකට ලොග් වෙලා වැඩ කරන්න. [...] මම ගොඩක් වේලාවට නයිට් ෂිෆ්ට් ඉන්නවා අඩුයි.සමහර අය නයිට් ෂිෆ්ට් ඔෆිස් වල වැඩ කරන කට්ටිය ඉන්නවා.එතකොට නයිට් එකේදී ගොඩක් වේලාවට කමන්ගෙ ස්ටඩිස් මොනවා හරි කරනවානම් ඒවා කරන්න ලැබෙන අවස්ථාව වැඩියි.එතකොට 24 අවර්ස් ඇක්සස් තියනවා නම්, එතකොට ඔෆිස් එකේ වගේ ඉන්න වර්ක් කරන කට්ටියට ඔෆිස් එකේ ඉන්නවනම් කරන්න පුළුවන් [...]</p>
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Box 8-14: Nirodha-24Y-M-Colombo

<p>Generally after you start working it is not only studies that you have, you have other things like your family life, your children. This was the first course that we found, which was flexible enough to be accommodated in the free time that we have</p>	<p>සාමාන්‍යයෙන් රස්සාවකට ගියාට පස්සෙ ඉගෙන ගන්න එකම නෙමෙයිනෙ කෙනෙකුට තව දේවල් තියනවානෙ ෆැමිලි එකක් තියනවා, බබාලා ඉන්නවා එහෙම එහෙමනෙ එතකොට අපේ තියන කාලෙන් එක්ක කරන්න පුළුවන් ෆ්ලෙක්සිබ්ලිටි එකක් තියන එකක් හම්බවුනෙ පළවෙනි එක මේක</p>
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Box 8-15: Nishara-41Y-M-Kalutara

Access to Rural Students

In Sri Lanka, radio and television are more accessible than computers and the Internet to the majority of the population. However, as can be seen in Figure 8-10, only 61% of respondents agreed that using television or radio for educational programmes was a good method to reach

people. Respondents disagreeing had concerns that working on a shift basis and commuting could prevent them from watching educational programmes on television as programme recording facilities were not widely available.

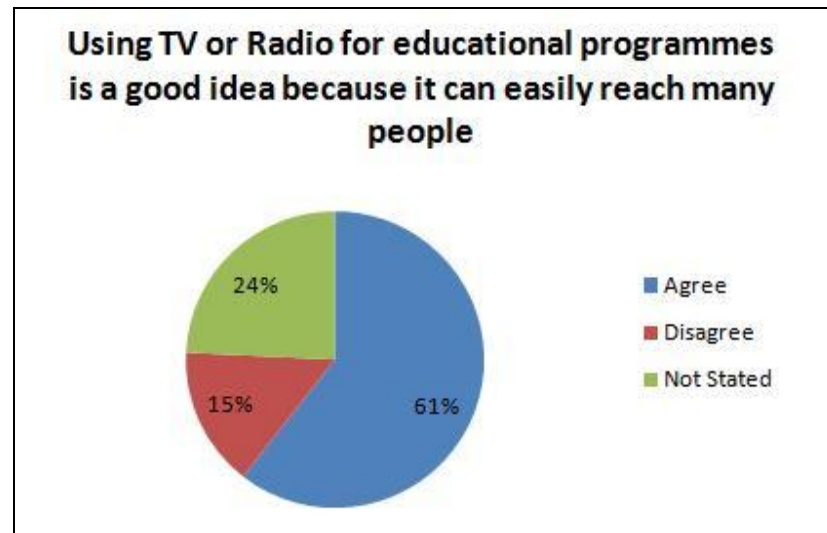


Figure 8-10: Using TV or Radio for Educational Programmes

As Figure 8-11 shows, more than three quarters of respondents (76%) agreed that using online learning and computer-based learning would limit students who were unable to afford the necessary facilities; 73% of respondents agreed that using ICTs as an optional means would be a better approach. This was previously discussed in Chapter 5.

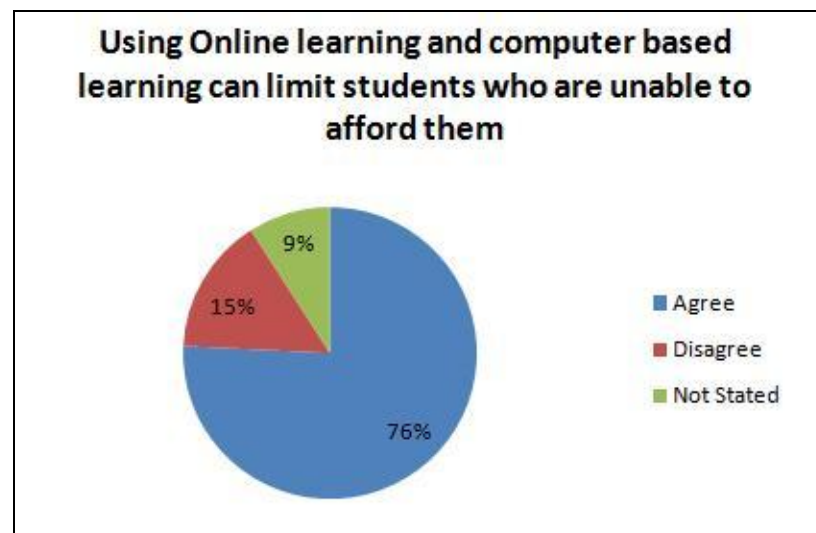


Figure 8-11: Online Learning Can Limit Students

8.3.1.4 ICT and English Knowledge

This DE programme is conducted in English medium and a pass in the A/L General English is a prerequisite for registration. Although respondents' working knowledge of English varied, as can be seen from Figure 8-12, their self-reported English language proficiency (on a scale of excellent, good, average, poor and very poor) was seen to be above average. However, it is worthwhile noting that this questionnaire only reached the students who remained in the programme in the third year and it is possible that students weak in English had already dropped out. Also there is the possibility of students over or under rating their English language ability, a known weakness in any self-completion questionnaire, which was discussed in Chapter 6.

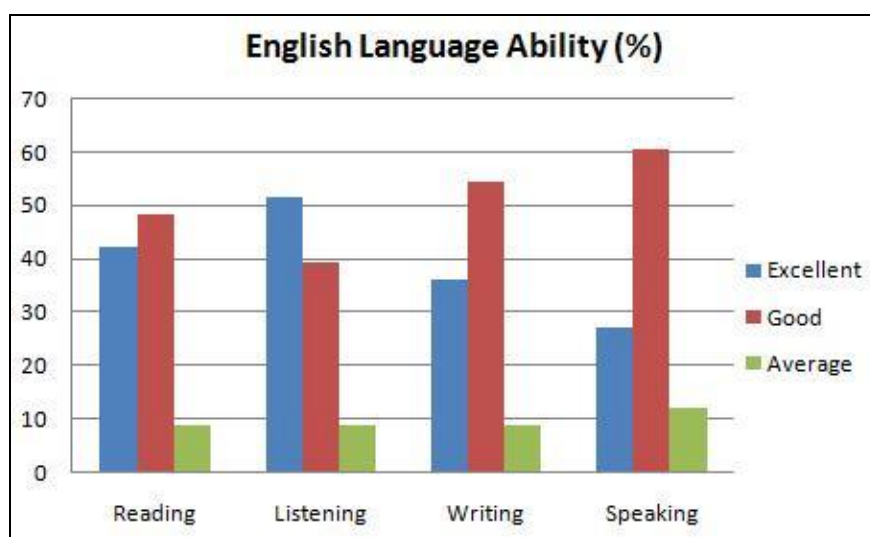


Figure 8-12: English Language Ability (%)

Respondents felt that reading and comprehension were the most important as far as English ability was concerned (see Box 8-16).

You need to have the English competency to read a given passage or a text and to grasp its meaning.

මොකක් හරි දැසෙන්න ඒකක් හරි මොකක් හරි කියවලා ඒකෙ තියෙන අදහස තේරෙන්න ගන්න පුළුවන් මට්ටමක ඉංග්‍රීසි දැනුවත්කම තියෙන්න ඕන.

Box 8-16: Nirodha-24Y-M-Colombo

A relationship between English language proficiency and the district of residency was difficult to establish as the majority of respondents were from Colombo.

As can be seen from Figure 8-13, 67% of respondents agreed that using computers and electronic resources for learning was difficult if one was not competent in English. However,

24% disagreed and felt that despite the usage in computer interfaces, a high level of English was not necessary in order to use computers for learning (Box 8-17).

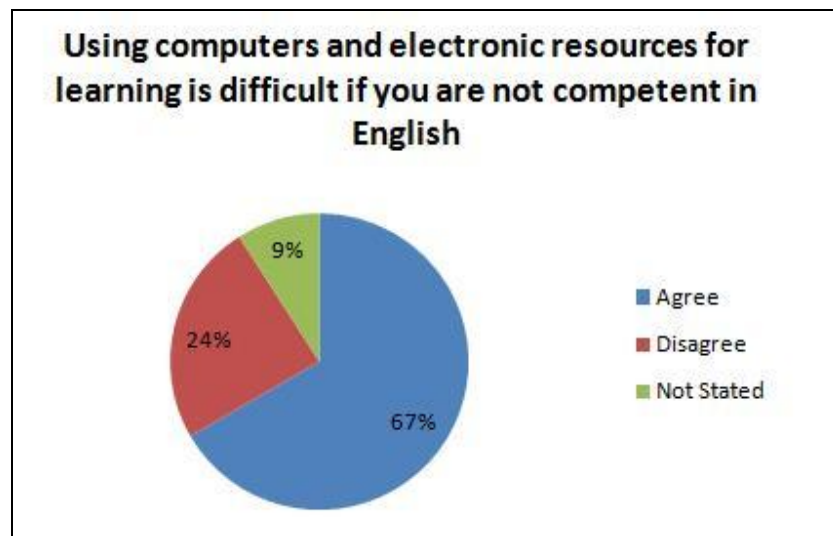


Figure 8-13: Learning with ICTs and English

Though English is the language used in a computer, it is not essential for you to have knowledge of English. Even we were not very fluent in English when we came to study about computers. There is a lot of technical jargon involved with computers. One can learn as he/she goes along. However, a certain basic knowledge in English is needed.

ඉංග්‍රීසි වලින් කම්පියුටරේ තිබුනට ඉංග්‍රීසි දැනුම අනිවාර්යය නැහැ. ඉතිං අපි වුනත් කම්පියුටරේ හරියට ඉංග්‍රීසි හුලුවන්ට වෙලා නෙමෙයි කම්පියුටර් ඉගෙන ගන්න ආවෙ. මොකද අර ඒකටම යුස් වෙන ටෙක්නොලොජි ලැංවේජ් වල තියන විවිධ අනං මනං ගොඩක් ඉංග්‍රීසි දැනගෙන නෙමෙයි. සාමාන්‍යයෙන් මිනිස්සු අර හුරුවට යන්න පුළුවන්. ඉංග්‍රීසි හැබෑයි ඕන සාමාන්‍ය දුරකට.

Box 8-17: Chandrasiri-32Y-M-Colombo

As can be seen in Figure 8-14, despite reporting above average English language ability, nearly half of the respondents (49%) were worried that using computers and electronic resource could affect their learning due to the lack of learning resources in local languages. It is likely that students who were educated (at school) in local languages were concerned about the change of language medium for their HE. As discussed in Chapter 5, the lack of local language content is a difficulty faced by many in Sri Lanka.

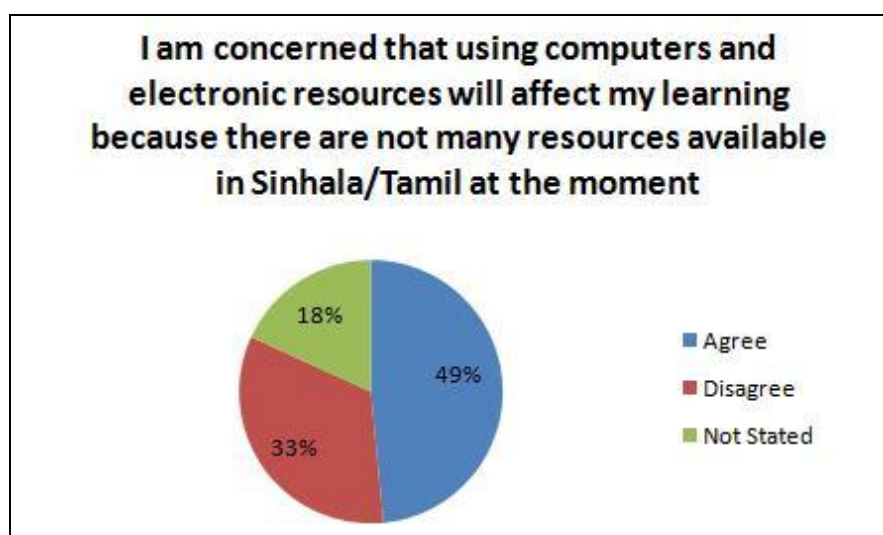


Figure 8-14: Concern on Lack of Local Language Content

8.3.1.5 Summary

Students considered ICTs to be particularly important for anytime anywhere access. However, shortcomings in material preparation and issues with connection speeds reduced its value. Although the use of ICTs was expected to reach disadvantaged students, enhance experience and quality, and reduce costs, there were compelling accounts that contradicted this belief. The lack of facilities for rural students was acknowledged.

There was a general consensus that ICTs improved communication and interaction. However, due to the hierarchical information flow in the programme, ICTs failed to facilitate interaction with lecturers. Despite students being concerned about the quality and acceptability of online degree programmes, they regarded qualifications obtained online as equal to those earned in-person. Although the sample comprised of students with above average English ability, nearly half of them were concerned about the lack of local language content.

8.3.2 Utilizing ICTs for Learning

This section explores the ways in which OVU students used ICTs to engage in their study programme.

2. d. How do they utilize ICTs to engage in their learning programmes?

As the programme is conducted online, students regularly accessed the LMS. As can be seen from Figure 8-15, respondents regularly used relevant websites, search engines, online discussion forums and digital copies of lecture notes, all of which were accessible from a computer with an Internet connection. TV/ radio programmes, printed notes and library resources were infrequently used.

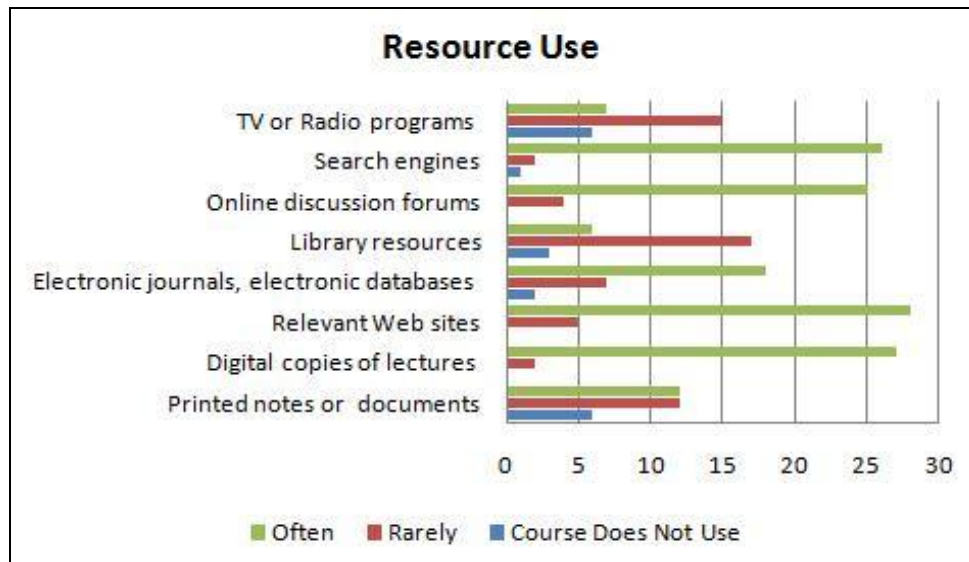


Figure 8-15: Resource Use

8.3.2.1 Online Discussions

Frequent access to online discussion forums was expected, because 5-10% of continuous assessment marks were allocated for participation in discussions. Respondents' contributions to online discussions are summarized in Figure 8-16. More than half of the respondents (52%) reported to have participated in almost all discussions with only 3% reporting never having contributed to a discussion.

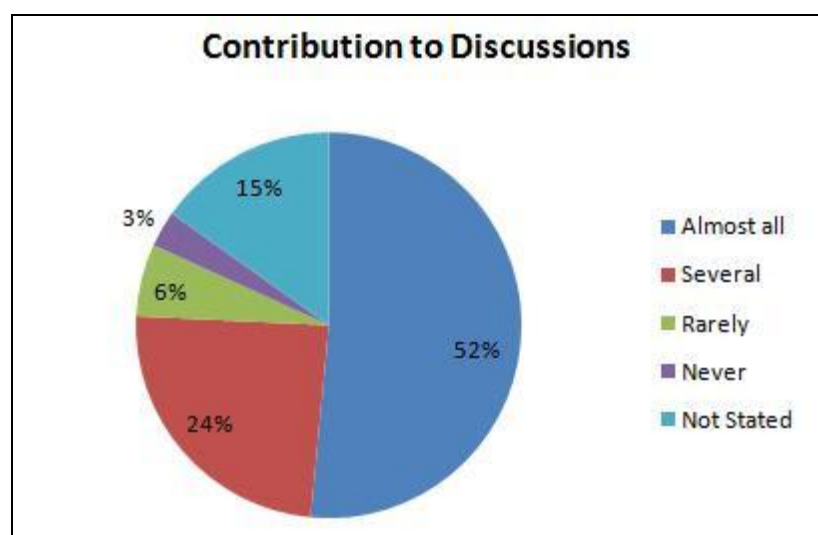


Figure 8-16: Contribution to Discussions

Some were enthusiastic about participating in online discussion forums. They viewed it as an opportunity to share knowledge and ideas with other students. For example, Himali described her experience with online forums (Box 8-18) and it can be seen that she is learning from others and considers learning to be social interaction.

Participating in online discussions is essential. We must take part in those forums. As it is made compulsory, we cannot ignore them. We would check the comments posted by others, and it greatly helps to improve our own knowledge.

ඔන්ලයින් ඩිස්කස්ෂන්ස් එකක් අපට අනිවාර්යයි. ඒක කරන්නම ඕන, ඒ ලෝරම්ස්. ඒක අනිවාර්යය කිරීමෙන් අපට ඉන්නේ කරන්න බැරුව යනවා. අපි බලනවා අනිත් අයගේ මොනවාද කමෙන්ට්ස් කියලා. අනිත් අයගේ ඒවා බැලෙන නිසා ඒක ගොඩක් හොඳයි අපේ නොලේස් එක ඉම්පරුවී කරන්න.

Box 8-18: Himali-28Y-F-Galle

However, some others felt that forums were not of much use, as they did not experience or witness a continuous discussion taking place online. For example, Chandrasiri describes his experience in Box 8-19.

There are forums, but there are times I post on them. Though many people do take part, I do not often see a discussion being continued. [...] What people do is, they put up a topic and post something. Like this, everyone would just post something that is relevant to the topic. It is very rarely that a person would post a reply to someone else's post. Forums just have one post from each student.

ලෝරම්ස් කියනවා ඒවට හැබැයි මම ලියන ටේබලාවල්කේරයනවා. ඒ වුණට සාමාන්‍යයෙන් ලිව්වට අපි ගොඩක් කම්බිය මම දකින්නෙ කන්ට්‍රිවුට්ස් ඩිස්කස්ෂන් එකක් නැහැ.[...] ගොඩක් කම්බිය අපේ වෙන දෙයක් තමයි අපි තිහමු දැන් මොනවා හරි එක පෝස්ට් එකයි කියෙන්නෙ. ටොපික් එකක් දාලා එක පෝස්ට් එකයි දාන්නෙ. ඒකට රිප්ලයි හැමෝම එකකට තනි තනියෙන් මොනවා හරි ටොපික් එකට අදාළ මොනවා හරි ලියනවා. බොහෝම හදිසියෙන් එක්කෙනෙක් දෙන්නෙක් ඕකට රිප්ලයි කරනවා. ලෝරම්ස් වල හැමෝගෙම එක පෝස්ට් එකයි කියෙන්නෙ.

Box 8-19: Chandrasiri-32Y-M-Colombo

Nirodha on the other hand questioned student participation in online forums as he believed that it was only because of marks that students participated in them (Box 8-20).

I do take part in forums. But there is a problem: to tell the truth, we take part in forums because they have allocated marks for that. If they did not do that, I do not think that there would be such good participation in online discussion forums.

ෆෝරම්ස් වලට සහභාගි වෙනවා. හැබැයි දැන් මෙහෙම එකක් තියෙනවා. අපි ෆෝරම්ස් වලට සහභාගි වෙන්නෙ මේක ඇත්තටම ගැටළු සහගත දෙයක්. අපි ඇත්තටම ඒකට සහභාගි වෙන්නෙ ඒකට ලකුණු දෙන නිසා. මොකද එහෙම නැතුව ඩිස්කස්න් ෆෝරම්ස් වලට ලකුණු නොදුන්න නම් ඩිස්කස්න් ෆෝරම්ස් වලට ඔය තරම් සහභාගිත්වයක් එයි කියලා

Box 8-20: Nirodha-24Y-M-Colombo

Nirodha further emphasized the use of other forms of communication to discuss and resolve problems (Box 8-21); Google ChatTM, Yahoo[®] Messenger and SkypeTM were used. In addition, students also used telephone calls, text messaging and emails to discuss problems with others (see Box 8-21).

Even when we consider “help wanted” or “help given” forums, people’s participation is very low with regard to most subjects other than for the really problematic ones. There are two discussion forums where we are given marks for our participation. It is those that we mostly take part in. Apart from that, we communicate and discuss problems over Google chat, Yahoo messenger or Skype, or even use mobiles, SMS or emails.

හෙල්ප් වෝන්ටඩ්, හෙල්ප් ගිවන් ෆෝරම්ස් වල වූණත් යම් යම් ලොකු ප්‍රශ්න තියන සබ්ජෙක්ට්ස් වල ඇරඹෙන අනෙක් සබ්ජෙක්ට්ස්වල සහභාගිත්වය ගොඩක් අඩුයි. ඩිස්කස්න් ෆෝරම්ස් දෙකක් තියනවා අපිට අනිවාර්යයෙන්ම මාක්ස් කැල්කියුලේට් කරන.ඒ දෙකට තමයි අපි ගොඩක් මේ කරන්නෙ අනෙක් ඒවට ගූගල් චැට්, යාහු මැසෙන්ජර්, ස්කයිප් තර් නැත්නම් මොබයිල්, එස්.එම්.එස්. වගේ ඊමේල්ස් වලින් අපි කරා කරනවා කරලා ප්‍රශ්න නිරාකරණය කරගැනීමක් කරනවා.

Box 8-21: Nirodha-24Y-M-Colombo

The data also showed that not many students relied on LMS’ online discussions for resolving subject-specific problems. Many students were part of a small circle of friends who regularly “met” online to discuss subject matters/problems. For example, Nirodha described his experience of working online with friends and how they progressed from using basic communication tools to more sophisticated ones (Box 8-22). This is similar to the observations made by Conole and de Laat et al. (2006) where they reported that some students kept close contacts with a group of close friends using email, “MSN” and text messaging when they were working on assignments.

We got to know each other over face-to-face sessions. At first, we talked over phone. After that we joined Skype. Later on we started to share the desktop screen using Teamviewer software.

ෆේස් ටු ෆේස් සෙෂන්ස් වලින් කථාවිය ගොඩක් අදහන ගත්තා.අපි කලේ මුලින් මුලින් ටෙලිෆෝන් වලින් තමයි කථාවිය කතා කලේ.පස්සෙ අපි ස්කයිප් වලට ජොයින් වුනා.ඊළගට අපි ටීම් විවර් තර් අපි ස්ක්‍රීන් එක සෙයා කරන්න වුනා.

Box 8-22: Nirodha-24Y-M-Colombo

Arjuna believed that using SkypeTM software to form a virtual support group had helped students to remain in the programme (Box 8-23). He described it as a “known group” of students that communicated using SkypeTM. Nishara too stated that there was a “different community” that he corresponded with (Box 8-24). Thus, it can be seen that even though the

University promoted online discussions through its LMS for the whole cohort, students formed informal groups, within which they were using advanced ICTs to communicate and interact. Further, these students were helping each other to understand concepts demonstrating that Vygotsky's (1978) concept of social interaction (Mooney 2000; Smidt 2009) for learning was important for them. For example, in Box 8-23, Arjuna explains how he gets help from his peers through Skype™ calls.

Most of the time, we chat over Skype. Sometimes I would get the others' help in things I do not understand. [...] That is why I think the rest of the students do not drop out. A few of us have got together and we study together as a group, as all of us are employed	හුඟක් වෙලාවට අපි ස්කයිප් එකෙන් එකතු වෙතවා. දැන් සමහර වෙලාවට මට බැරි එකක් එයාලගෙන් අහනවා ඒ විදියට පොඩ්ඩක් කරනවා. [...] ඒකයි මම හිතන්නෙ ළමයි ඉතුරු කට්ටිය හැලෙන්නෙ නැත්තෙ. අපි අළුත ශ්‍රැප් එකක් ඉන්නවා අපි පාවිච්ඡි කරන කොට එකට පාවිච්ඡි කරනවා අපි ඔක්කොම පොඩ්ඩක් කරන නිසා.
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Box 8-23: Arjuna-23Y-M-Colombo

Most of the time, it could be Skype, Google, or email [...] Google is there, and so is FaceBook. There is a separate community there.	ස්කයිප් වෙන්න පුළුවන්, ගූගල් වෙන්න පුළුවන්, එහෙම නැත්නම් ඊමේල් වෙන්න පුළුවන් හුඟක් වෙලාවට [...] ගූගල් තියනවා, ෆේස් බුක් තියනවා වෙනමම කමියුනිටි එකක් ඉන්නවා එතැන
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Box 8-24: Nishara-41Y-M-Kalutara

8.3.2.2 Electronic Resources and Library Resources

Only 3 respondents had answered the question of preferred media. 2 out of the 3 respondents preferred printed materials while the other one preferred video. Reasons for this lack of response were discussed in interviews. Apart from a reference text book, all other materials including lectures, notes and handouts were provided in digital format. As respondents were receiving almost all of their course material as PDF documents, only one or two video lectures and almost none in print (except the text book), they did not feel that they had a choice. The majority of students who participated in interviews preferred print medium, but as printed notes were not provided, they had omitted the question. Almost all interview participants were concerned about the cost and hassle involved in printing copies of digital lecture notes (Box 8-25, Box 8-26 and Box 8-27).

[W]e take printouts. Not that we can always keep the computer on and study. We take printouts and then we study when it is convenient for us. So if they don't upload the materials on time we find it difficult because every week we can't be going and taking printouts.

Box 8-25: Shashika-29Y-F-Colombo

We had a problem of getting the notes printed. Most of us use CRT monitors, not LCDs. Therefore, it cost us a lot to get those printed	අපට මැටීරියල්ස් ප්‍රින්ට් කරගන්න පුළුන්යක් තිබ්බා.අපි ගොඩක් කට්ටිය එල්.සී.ඩී. ස් තෙමෙයි පාවිච්චි කරන්නෙ සී.ආර්.ටී. මොනිටර්ස්. එතකොට ඒවා ප්‍රින්ට් කරගන්න අපට සැහෙන්න වියදම් වුණා.
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Box 8-26: Nirodha-24Y-M-Colombo

We have to get the notes printed.[...] We are used to study from paper based notes. Those of our generation are used to study from paper, to highlight. We are used to pen-and-paper work. That is how we studied up to our Advanced Level exam, and that is the method that helps to register things in our minds. So I need printed notes.	අපි ප්‍රින්ට් කරගන්න ඕන [...] අපි දැන් පුරුදු වෙලා තියෙන්නෙ කොලේ කියවන්න.මගේ පරම්පරාව අපි පුරුදු වෙලා තියෙන්නෙ කොලේ කියවන්න. හයිලයිට් කරන්න.ඔක්කොම පෑනෙන් කරන ඒවා තමයි අපට පුරුදු වෙලා තියෙන්නෙ.අපි ‘ඒ ලෙවල්’ කරනකල් එඩියුකේෂන් වලදි කලේ ඒක.අර සාමාන්‍යයෙන් දෙයක් ඔප්වට එන්නෙ ඒ යන පිළිවෙලේ යනකොටනෙ.ඉතිං ඒක නිසා මට ප්‍රින්ට්ඩ් නොවිස් ඕන.
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Box 8-27: Nishara-41Y-M-Kalutara

Nirodha preferred printed material because of the difficulty of looking at a CRT (Cathode Ray Tube) monitor for a prolonged period; for Shashika, mother of a new born, it was not practical to be at the computer to study, while for Nishara it was “his generation’s” practice. The lack of reliable electricity supplies (Box 8-89) and the limited availability of the system (Box 8-85) could be another reason for students to rely on printed materials; for example, Shashika’s above comment could also mean that it is not practical to keep the computer switched on for a prolonged period because of possible power failures that could affect the hardware.

Laptops with charged batteries would have been much more useful for students as power interruptions would not affect their use. However, only 11.4% households in Sri Lanka owned a laptop or desktop computer in 2009, while 10.6% households owned desktops (Department of Census and Statistics Sri Lanka 2009a). From these available statistics it is difficult to infer the percentage of laptop ownership in Sri Lanka; but as laptops are more expensive, laptop ownership is likely to be lower than desktop ownership. The questionnaire did not investigate the availability of laptops, mainly because it was felt that participants who do not own computers would be discouraged that the questionnaire was not meant for them. Kindle, the lightweight powered document reader, could have been an ideal solution for students like Nirodha but the high cost of such sophisticated equipment (at the time of the study) makes them inaccessible for the majority of Sri Lankan students.

Surprisingly students who preferred printed medium and went to the bother of printing digital lecture notes, reported a minimal use of library resources. Further investigation showed that these students were in fact denied access to the University library facilities. Contact with the library authorities established that external students were not registered for library facilities as there was a shortage of resources. Students therefore were greatly disadvantaged being without these facilities. However, as books are expensive only one participant was able to buy books (Box 8-28). As discussed by Drahos and Braithwaite (2002), the exorbitant prices of books produced in developed countries have made them unaffordable for many in developing countries. This highlights the importance of the need to have library access, especially in developing countries.

Another participant expressed the view that some students from rural areas left the course explicitly because they were unable to access resources for referencing (Box 8-29). He described his failed efforts to request for online resource access from the CDL.

<p>I do not think that there are such libraries in Sri Lanka. Anyway, in Colombo Public Library, you do not get such books. Those that are there are ancient. Ceylinco has a library, and you find one or two there very rarely. But there, the access is reserved for its members. I just go through the collection when I am borrowing other books, and it is extremely rarely that I find one. Most of the time, I buy books on the subjects that we have to study.</p>	<p>ලංකාවේ එහෙම නියත ලයිබ්‍රේරිස් නැහැ මං හිතන්නෙ.කොහොමත් කොළඹ පබ්ලික් ලයිබ්‍රේරි එකේ එහෙම පොත් නෑ.නියත ඒවා සමහරක් ගොඩක් පරණයි.සෙලින්කෝ එකේ ලයිබ්‍රරියක් තියනවා ඒකෙ බෙහෙම කලාතුරකින් එකක් දෙකක් තියනවා.ඒත් ඉතිං මෙමිබර්ස්ලට චිතරයි.අනික් පොත් ගන්න තිත්දා මම ඒකෙන් ගිහින් බලනවා අතරින් පතර තියනවාද කියලා.හම්බවෙනවා නම් ගොඩක් අඩුයි.මම ගොඩක් වෙලාවට නියත සබ්ජෙක්ට්ස් වලට පොත් ගන්නවා.</p>
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Box 8-28: Chandrasiri-32Y-M-Colombo

<p>Now that this is an online course, we do not have library facilities. We do not get online libraries, and so we have to look for books. If you are in Colombo, you can go to British Council or somewhere to find the books; but if you are in Badulla or Anuradhapura [rural areas], that is not feasible. We are not given online references either. So such people [people from rural areas] dropped out of the course. [...] There can be no problem with providing us online references. I inquired about this even at an earlier meeting with CDL.</p>	<p>එතකොට, මේක ඔන්ලයින් වෙනකොට ලයිව් නෑ. ඔන්ලයින් ලයිව් අපට දෙන්නෙ නැහැනෙ එතකොට අපි පොත් හොයන්න ඕන.කොළඹ ඉන්න කෙනෙකුට නම් බ්‍රිටිෂ් කවුන්සිල් හරි කොහෙ හරි ගිහිල්ලා හොයා ගන්නා.ඒත් බදුල්ලේ අනුරාධපුරේ ඉන්න කෙනෙකුට ඒ වැඩේ කරන්න බැහැ.ඒගොල්ලන්ට ඔන්ලයින් රෙෆරන්ස් නැහැ.එහෙම වුණම ඒගොල්ලො අත හැරියා. [...]ඔන්ලයින් රෙෆරන්ස් දෙන්න බැරි කමකුත් නැහැ.මීට ඉස්සල්ලා සී.ඩී.එල්. එකක් එක්ක තිබුණ මීට් එකකදීත් මම ඇහුවා ඇයි අපට ඔන්ලයින් රෙෆරන්ස් දෙන්න බැරි කියලා</p>
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Box 8-29: Nishara-41Y-M-Kalutara

If resource limitation was the sole reason for denying library access to external students, one could wonder (like Nishara) why online resources should be barred, as they are intangible

and could be accessed by many at the same time without loss of quality. Authorities at the MoHE were envisioning resource sharing for optimal benefit:

How many resources are idling in the universities? Even the computer labs, even the scientific laboratories that are in the university system are only used during the day time. If you go after 2.00 'O clock there is no one there. After 4.00pm it's totally closed. Why is it like this? Through online learning actually you can share the resources any time. But basically this external degree courses I think we have to promote this concept. Because these students, our own brothers, own sisters, own children they are denied of the opportunity.

Box 8-30: A Highly Placed Official at the MoHE

However, as can be seen in the discussion so far this is contradicted in practice.

Some of the OVU online library resources are password-protected while others are IP-filtered. Even with an IP-filtered system, external access could be obtained by accessing through Virtual Private Network (VPN) software. Thus it is possible to provide access to online materials to external students without giving them access to internal computer lab facilities, which are already congested. On the other hand, the pricing models of online publishers are complicated; some of these include variables such as the number of staff and/or number of students a university has and the subject areas these staff and students are in. Most universities negotiate online subscription fees for a period of time for a given number of students. Then, if one of the variables such as the number of students changes drastically, for example by giving access to external students, the cost of subscriptions could increase in such a way that it is not financially viable for the university to continue subscription. This might be a reason why external students were not given access to online resources subscribed to by the University.

The problem of library resources could be solved if open access to all materials was available. The Open Access Scholarly Publishers Association (www.oaspa.org) and Enabling Open Scholarship (www.openscholarship.org) promotes this concept, which would allow anyone with access to the Internet to be able to read academic papers. This is invaluable, especially for research institutions in developing countries, because the subscription fees of online journals are out of range for many due to cost.

OVU students were aware of the need to validate the reliability of web sources. They described using known sources. For example, Nirodha mentioned the reliability of the source (Box 8-31) and Nishara mentioned searching other university sites for materials (Box 8-32).

Though I say Internet, I do not mean Wikipedia. There are reliable sources, such as Howstuffworks.

ඉන්ටනෙට් එකේ කිව්වට විකිපීඩියා නෙමෙයි රිලියබල් සෝස්ස් නියනවා හවිස්ට් වර්ක්ස් වගේ

Box 8-31: Nirodha-24Y-M-Colombo

For some subjects, I use material from Indian Universities. There are good videos of lectures and demonstrations, which you can get for free on the Internet. If you search on YouTube, you will get lots of them. I find them very descriptive too. I use these to gain knowledge on the essential things.

සමහර සබ්ජෙක්ට්ස් වලට මම ඉන්දියන් යුනිවර්සිටිස් වල මැටේරියල්ස් පාවිච්චි කරනවා. විඩියෝ ලෙක්චර්ස් නියනවා ඒගොල්ලන්ගෙ, ඒගොල්ලො හුඟක් වෙලාවට ඩිමොන්ස්ට්‍රේෂන්ස් හොඳ විඩියෝස් නියනවා. ඒවා ශ්‍රී තියෙනවා ඉන්ටනෙට් එකේ. යුටියුබ් එකේ සර්ච් එකක් දැම්මොත් ඒ වගේ ගොඩාක් එනවා. ඒවා ගොඩක් ඩිස්ක්‍රිප්ටිව්. ඒවා පාවිච්චි කරලා මේ අවශ්‍ය දේවල් වලට නොලේස් එක එකනින් අරගන්නවා

Box 8-32: Nishara-41Y-M-Kalutara

8.3.2.3 Assignments

The electronic submission of assignments was appreciated by all students, especially by employed students (Box 8-33).

We can log on any time to do the work. If the deadline is at midnight, we can submit it even at 10.30pm. On the other hand, if this had been a regular course at a university, we would have had to go there to hand it over on that day itself, or on the previous day, regardless of whatever other work we had. [...] Assignment submission is really very convenient this way.

අපට ඕන වෙලාවක අර ලොග් වෙලා කරන්න පුළුවන්නෙ. අද රැ 12.00 ට ඩෙඩ් ලයින් එක නියනම්. අද රැ 10.30 ට හරි අපිට ඒක දාන්න පුළුවන්නෙ. එහෙම නැතුව කරන කැම්පස් එකක නම් එදා දවසෙ කොහොම හරි ගිහින් බාර දෙන්න වෙනවානෙ. එක්කො කලින් දවසෙ, මොන වැඩක් තිබුණත්. අන්න ඒ පහසුකම තියෙනවා. [...] අසයින්නට්ටි සබ්මිට් කරන එකනම් ඇත්තටම පහසුවක්.

Box 8-33: Himali-28Y-F-Galle

Many respondents admitted that they submitted assignments at the last minute (Box 8-34) and that they used web resources to find information for assignments. When using web resources, students who were not fluent in English faced the problem of paraphrasing content (Box 8-35).

We usually upload everything at the last moment [...] If you check, you will see that more than 75% of the people upload an assignment during the last hour before the deadline.

අපි අන්තිම ඩෙඩ්ලයින් එක කිව්වු වෙලා තමයි අපි හැමදෙයක්ම අප්ලෝඩ් කරන්නෙ. [...] ඔයා බැලුවොත් 75%කට වඩා කට්ටිය මොකක් හරි අසයින්නට්ටි එකක් අප්ලෝඩ් කරනවා නම් අන්තිම පැයේ තමයි අප්ලෝඩ් කරන්නෙ.

Box 8-34: Nirodha-24Y-M-Colombo

It is very difficult to complete an assignment solely depending on the notes that they give us. [...] So what we do is, we search the Internet, and edit and modify the information we get. If one is not competent in English, it would be very hard to edit like this, and s/he would end up with the same thing as s/he found online. Then we take a few facts from the note and “sprinkle” them here and there in the assignment and that is how we do theory based assignments.

අපට එයාලා දෙන තෝරි එකක් එක්ක අසයින්නේම එකක් කම්ප්ලිට් කරන්න හරි අමාරුයි. [...] ඒ වෙලාවට ඉතිං ඉන්නේම සර්පි කරන එක තමයි කරන්නේ. ඉන්නේම එකෙන් අරං අපි ඒක එඩිට් කරනවා. ගොඩක්ම ඉංග්ලිෂ් නොලෙස් එකක් නැතිනම් එයාට ඒක හරියට එඩිට් කරගන්න වෙන්නේ නැ. අර තියන එකම තමයි ගොඩක් වෙලාවට එන්නේ. පොඩ්ඩක් ඉතිං එහෙත් මෙහෙත් තෝරි එකේ තියන එකක් ඇඩ් කරලා තමයි අපි තියර් ඩේස්ඩ් අසයින්නේම එකක් ට්‍රිකොන් එහෙම තමයි කරන්නේ.

Box 8-35: Shanil-29Y-M-Badulla

As the University is not utilizing plagiarism detection software these students have not had issues with their assignments.

We don't use this “Turnitin” software as an official thing. But I think it depends on the individual. They [examiners] have their own ways of [checking] ... we have not really recommended anything. Maybe we need to look into it.

Box 8-36: A Highly Placed Official at the CDL

A student described how he helped three other students on two occasions to do their assignments and how he (the original author) ended up with lower marks than the obviously poorer quality submissions of the students he helped, leading to concerns over whether the assignments were actually evaluated or whether the same rubric was applied (Box 8-37).

Once we had to create a MYSQL database. [...] It took four of us to understand the assignment. However, it was not possible to install MYSQL in the machines of two of us four, as some error was reported. Therefore, it was I who had to design the databases for all four people. I edited it on my machine, and designed databases with less data and less fields than mine for the others. But it turns out that it is I who have got the lowest marks. The database with the least data, and which is actually not even completed, has been given the highest marks. The same thing happened once again, in Macromedia Design. [...] So I doubt whether they even go through the assignments that we do. But we cannot voice these doubts, as then they would get to know that we copy each other's assignments. [...] If a person falls ill, a friend usually does his/her assignments for him/her. What happens is, the latter would edit his own assignment taking away a few elements, and submit it in the name of the person who is ill.

අපිට තිබුණා MYSQL ඩේටා බේස් එකක් හදන්න. [...] අපි හතරදෙනෙක් එකතු වෙලාම අසයින්නේම එක තේරුම් ගත්තේ. අපේ දෙන්නෙක්ගේ මැෂින් වල MYSQL දාන්න බැහැ එරර් එකක් එනවා. අපි එක්කෙනෙක් ඩිසයින් කලා ඩේටා බේස් එක හතර දෙනාටම. මම ඩිසයින් කලේ. මම හතර දෙනාටම එඩිට් කලා මගේ මැෂින් එක. මට වඩා අඩු ඩේටා, මට වඩා අඩු ෆීල්ඩ්ස් තියෙන්න ඩේටා බේස් හදලා දැමීමා. ලෝ මාක්ස් තියෙන්නේ මට. අර අඩුවෙන්ම ඩේටා තිබුණ කම්ප්ලිට්ම නෑ ඒක ඇත්තටම. එයාට තමයි හයි මාක්ස් තිබ්බේ. තව සැරයක් ට්‍රිකොන් එහෙම ට්‍රිකොන් Macromedia design වල. [...] ඉතිං අසයින්නේම ඔලන්වාද කියලත් මට නම් සැකයක් තියනවා. ඕක කර්ක කරන්න බෑ එතකොට එයාලා දැන ගන්නවා අපි කොපි කරනවා කියලා. [...] අසයින්නේම එකකදි අපි ගොඩක් වෙලාවට ලෙඩ ට්‍රිකොන් පස්සෙ වගේ යාච්චෙකුගේ අසයින්නේම තව එක්කෙනෙක් කරනවා. කරන්නේ ඉතිං තමන්ගේ එකෙන් කැලී අඩු කරලා අරයට දානවා.

Box 8-37: Shanil-29Y-M-Badulla

Several types of academic dishonesty such as copying and pasting information from the web, incorrect paraphrasing, doing other students' assignments, and copying assignments from peers were admitted by students. All these incidents raise serious concerns about the quality of this online programme. However, these same concerns are not uncommon in in-person education (Adams 2011).

In terms of grading and feedback, there are many expectations that distant students have of their lecturers/tutors such as: being fair and objective; explaining and justifying the grade awarded; indicating possible improvements; being encouraging and giving a timely response (Cole, Coats et al. 1986). According to students' accounts (for example, see Box 8-9) their tutors have failed to fulfil these expectations.

Quizzes are a method of assessment which seemed to be popular among students as Moodle™ log data showed multiple access to quizzes by them. For example, 43 students were registered in “ITE 3005-Social Aspects of IT” module; its log data revealed that quiz-1 was attempted 426 times and quiz-2 401 times. This is in accordance with Tantrigoda's (2010) observation that despite poor participation in online discussions, students attempted online quizzes multiple times. It is possible to configure Moodle™'s multiple choice questions to present correct answers after one completes the quiz. It also allows generation of a random quiz from a question bank for a given student. However, it was reported that these facilities provided by the LMS were rarely used. For example, Nishara described his experience with quizzes (Box 8-38).

<p>In a quiz, if the same questions are repeated, you do not need to do it ten times; anyone can score full marks in it. Is that how it should be? I think not. I do not think that this was what they aimed at by including the concept of quiz in Distance Education. In some other instances, what you get is a few random questions from a pool. You never know whether you might get the same in the second attempt. Different types of questions are based on the same subject matter, and if you understand it well, you can answer. That is how it should be: and not checking answers on the first attempt and answering in the second.</p>	<p>දැන් ක්විස් එකක් දැමීමහම එකෙ තියෙන්නෙ එකම ප්‍රශ්න විකනම් එක දහසරක් කරන්න ඕන නැ. ඉල්ලා මාස්ස් ගන්න පුළුවන් ඕන කෙනෙකුට. එක නෙමෙයි තේද වෙන්න ඕනෙ? මං හිතන්නෙ නෑ එකයි කියලා ඕකෙ බලාපොරොත්තුව මොකද ඩිස්ටන්ස් එඩුකේෂන් වලට ක්විස් තියන කන්සෙප්ට් එක දාපු කෙනාගෙ බලාපොරොත්තුව එක වෙන්න බැරියාවට වෙන සමහර වෙනත් දේවල් වලදී එන්නෙ පුල් එකකින් ප්‍රශ්න කීපයක්, අපි දන්නෙ නෑ සෙකන්ඩ් ඇටෙම්ප්ට් එකේදී එකම එයිද කියලා. එකම සබ්ජෙක්ට් මැටීරියල් එක ගැන ප්‍රශ්න කරනවා කීපවිධියකින්. අපි එක දන්නවානම් එකකොට එකට උත්තර දෙන්න පුළුවන්. එහෙම නැතුව ඉස්සෙල්ලා එක බලලා පස්සෙ එකට උත්තර දෙන එක වෙන්න බැහැ.</p>
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Box 8-38: Nishara-41Y-M-Kalutara

Because students were aware of the facilities available in Moodle™, that is the random quiz facility; they were not pleased with the same questions being recycled. When that expectation was not met, it was seen as a shortcoming of the programme.

8.3.2.4 Summary

OVU students used electronic resources extensively. Almost everyone participated in “compulsory” online discussion forums. Many used other communication tools to discuss course materials among a selected circle of friends. With web resources, they were aware of reliability issues. Without access to the University library resources or a central repository of required books students were disadvantaged. Respondents who lived in Colombo (or Kandy) and could afford to pay the premium to access private libraries were able to refer to books, while others relied solely on the materials provided and the Internet. The University seemed to have a lenient policy on plagiarism; students did not appear to consider plagiarism seriously, which raises concerns of integrity. In some instances where online quizzes were used, they were poorly designed.

8.4 Gaining Access to Education

This section discusses how the use of ICTs has influenced access to HE.

3. How has the OVU’s DE programme influenced ‘access’ to HE?

e. Why have students enrolled in this programme?

As described in Chapter 2, there are very few places available for HE in the Sri Lankan state universities, and these places are allocated to students according to their GCE A/L performance. Students who are eligible for university entrance can miss the chance to enter a state university by a fraction of a mark or even if they do enter a state university, they may not have the chance to follow their preferred programme.

Because this system of HE has been practised for years, there are many working adults who were denied of the opportunity of studying at a HE institution. As discussed in Chapter 3, in order to be competitive today in the job market, regular knowledge updates are essential. The two interview participants who were above 30 years of age were concerned about their competitiveness in industry. Although their jobs were at the time secure, they felt a degree as a qualification would safeguard their positions (Box 8-39, Box 8-40).

Though initially they did not expect high qualifications, if a new person is to be recruited to my current position, they would definitely look for a graduate. Although I can remain in this position the way I am, a Degree is a required qualification for this post. Based on that, I also felt the need to obtain a Degree. When considering my current set-up, I thought I should go for an online programme of study

අපි අර ඉතිසියලි ලොකු කොලිචිතක්ෂණස් බැලුවේ නැති වුණාට දැන් ඉන්න ස්ටේජ එකේදීම ඉන්න පොසිෂන් එකට කවුරුහරි ගන්නවානම් අනිවාර්යයෙන්ම ග්‍රැජුවේට් කෙනෙක් තමයි ගන්නෙ. ඉතිං මට දැන් ඉන්න පුළුවන් ඒ වුනාට ඒ පොසිෂන් එකට ඒ වගේ දෙයක් ඕන. ඒ ඕක්කොම අවශ්‍යතාවයකුත් එක්ක මට අවශ්‍යතාවයක් ආවා. ඒ එක්ක මේ තියන සෙට්ස් එක්ක මට ඕන් ලයිත් ප්‍රොග්‍රැම් එකකට යන එක හොඳයි කියලා හිතුණා.

Box 8-39: Chandrasiri-32Y-M-Colombo

I could not perform well enough at the A/L exam to obtain university admission. So I followed a Diploma in Engineering and found a job. Then I continued my studies while working. I followed computer courses that enabled me to do the day today work. Even today, I can continue in the same manner. But I needed to get some accepted qualification, to help me to move ahead. This course was the first facility of that kind that I found.

මට 'ඒ ලෙවල්' තිබ්බේ නැහැ යුනිවර්සිටි යන්න පුළුවන් තත්ත්වයක්. ඊට පස්සෙ මම ඉංජිනේරු ඩිප්ලෝමා එකක් කලා. ඒ කරලා පොඩ් එකට ගියා. පොඩ් එකට ගිහිල්ලා ඒ ඉන්න ගමන් තමයි තව ඉගෙන ගත්තේ. එහෙම කරලා කම්පියුටර් කෝසස් කරලා එදා එදා අවශ්‍ය දේවල් තමයි කරගෙන ගියේ. අදටත් මට ඉන්ඩස්ට්‍රි එකේ වැඩ කරන්න පුළුවන්. ඒ වුනාට කොලිචිතක්ෂණ එකක් ගන්න ඕන වුනහම මට එතනින් එහාට යන්න ස්ථාවර එකක් ඕන වුනා. එතකොට ඒ වගේ එකකට ලැබීවිට පළවෙනි ෆැසිලිටි එක තමයි මේක.

Box 8-40: Nishara-41Y-M-Kalutara

8.4.1 Why Select Distance Education

The questionnaire investigated reasons for students selecting a DE programme; these are summarized in Table 8-5 below.

Table 8-5: Reasons for External Degree (%)

Reason	%
I wanted a part time course that can accommodate my other commitments	82
I wanted to study independently in my own time	76
Difficulty / an unwillingness to attend regular classes	67
I do this course partly or wholly because of the use of ICTs in teaching	64
The fee for this course is affordable	55
I did not get my preferred course at the course selection	33
There is a regional centre/ private tuition class that supports learners	30
I did not get my preferred university at the university selection	30
I won a scholarship that covers my course fees for this course	18

The majority of the respondents (82%) agreed that they were seeking a part-time course that would accommodate their other commitments. 76% wanted to engage in an independent study programme with 67% unable or unwilling to attend classes. 64% of respondents were enrolled in this programme partly or wholly because of the use of ICTs in teaching; 33%

stated that they did not get the preferred course at university selection, while 30% did not get their preferred university.

The target group of this programme were those academically eligible to enter university but denied entry due to the lack of available places. However, the majority of respondents seemed to have other compelling reasons for selecting this DE programme.

8.4.1.1 Prestige

Many students selected the programme because it was offered by the OVU. As the University has a good South Asian ranking and is considered to be one of the best in Sri Lanka (Study Abroad Universities 2010), obtaining a degree from OVU was considered a privilege by all interview participants, as shown by the following quotes from Shanil (Box 8-41), Chandrasiri (Box 8-42), Nirodha (Box 8-43), Charith (Box 8-44), Himali (Box 8-45) and Arjuna (Box 8-46).

<p>is considered one of the most prestigious Universities of Sri Lanka. Even in Asia, is considered as one with the best standards. It is a privilege for a student to obtain a Degree from a University such as this. That is why I enrolled for this course.</p>	<p>එක කිව්වම සාමාන්‍යයෙන් ස්ටූන්ඩ්ඩ් යුනිවර්සිටි එකක් ලංකාවේ තියන. ආසියාවෙන්ම බැලූවත් ස්ටූන්ඩ්ඩ් යුනිවර්සිටි එක ඒ වගේ යුනිවර්සිටි එකක ඩිග්රිස් ගන්න පුළුවන් වෙන එක ගොඩක් වාත්ස් එකක් ලමයකුට. ඒක නිසා මම මේක පටන් ගත්තා.</p>
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Box 8-41: Shanil-29Y-M-Badulla

<p>Earlier I got registered for the degree at the University of , and followed one semester there. Those days I just did it for the sake of doing, without this much commitment. [...] It is at that time that this course in got advertised. As is a more prestigious institute, I thought I should join this course.</p>	<p>ඉස්සෙල්ලා යුනිවර්සිටි එකේ එකට රෙජිස්ටර් වෙලා එක සෙමෙස්ටර් එකක් කලා. ඒ කාලෙ මම ඇත්තටම කරන්න: වාලෙ කළා මිසක් නිකං ඒකට කැපවෙලා කරන්න මේ තියන ඕන කම තිබුනෙ නෑ ඒ කාලෙ. [...] ඔහොම ඉන්න අතරෙ තමයි එක පබ්ලිෂ් වුනේ. ඊට පස්සෙ ඉතිං එකක් ප්‍රෙස්ටීජ් එකක් හොදයි ඉතිං ඒක හින්දා මේක කරන්න ඕන කියලා හිතුවා</p>
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Box 8-42: Chandrasiri-32Y-M-Colombo

<p>[University of] has a higher degree of prestige and acceptance than [University of] . We know this well, as we work in the industry itself. The name itself was also a reason for my selection.</p>	<p>කිව්වහම පිළිගැනීම වැඩියි ඒකක් වැඩිය පිළිගැනීම වැඩියි. අපි ක්ෂේත්‍රයේ ඉන්න නිසා දන්නවා. කියන නම තිබ්බ එකත් එක හේතුවක් වුණා ඒක කරන්න.</p>
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Box 8-43: Nirodha-24Y-M-Colombo

Even my elder brother studied in University of [REDACTED]. They maintain a good standard there, and even the university is highly recognized.	මගේ දරියර් [REDACTED] කැම්පස් එකේ තිබිය. [...] ස්ටූඩන්ඩර්ඩ් එකකුත් තියනවා, කැම්පස් එකටත් තැනක් තියනවා.
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Box 8-44: Charith-25Y-M-Matara

The most important factor is that I had a dream to obtain a Degree from [REDACTED]. I tried my best to enter [REDACTED], but could not get enough marks. That is the main reason for my following this course at [REDACTED] university.	මුල්ම දේ [REDACTED] යුනිවර්සිටි එකෙන් ඩිග්රීයක් ගන්න මගේ ලොකු හිතයක් තිබුණා. ඒක තමයි මුල්ම දේ. මම ට්‍රයි කලා [REDACTED] යන්න. ලකුණු ප්‍රශ්න මත බැරවුණා. ඒක තමයි මුල්ම හේතුව [REDACTED] යුනිවර්සිටි එකෙන් කොහොම හරි ඩිග්රීයක් ගැනීම තමයි පළවෙනි දේ.
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Box 8-45: Himali-28Y-F-Galle

I applied for both APIIT and NIBM, and was planning to follow one of those. Then I sat for the exam and got selected for this course, and decided to follow it because it is offered by University of [REDACTED]. If not, I would probably have gone for NIBM.	මම APIIT එකටයි NIBM එකටයි දෙකටම ඇමීමා, දෙකෙන් එකකට යන්නයි තිබිය. මම එස්සැම් ලියලා මේවා වූණ නිසා [REDACTED] යුනිවර්සිටි එකේ නිසා තමයි මේකට මේවා වූණේ. තැත්නම් මම හුඟක් දුරට NIBM තමයි යන්න තිබිය.
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Box 8-46: Arjuna-23Y-M-Colombo

8.4.1.2 Flexibility

The flexibility of the programme was another important reason for this course being selected by students in employment, those with family commitments and/or those living far from Colombo. The following quotes (Box 8-47 and Box 8-48) from respondents express the value they attached to flexibility.

[I]t is convenient and I don't have to go for classes, I can log in at any time I want and do my studies. It is easy, because most of the time I log in in the night. So it is easy for me [...] I don't think I will be able to go for classes. Mainly because I used to work during weekends, Saturdays and Sundays on roster basis. So now of course I don't work during weekend [following her maternity leave]. But initially I used to, so it would have been very difficult for me.
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Box 8-47: Shashika-29Y-F-Colombo

I did my A/Ls once, and then had to face a lot of problems with the tsunami and so on. I live in Matara. This course is more practical for me rather than travelling to Colombo from Matara to follow some other course. It has a good standard, and is done for the first time. Now I have other business to attend to at home too. Even with all of that, I can manage time to follow the studies as well. I do not need to travel for my studies; I can remain in Matara, and I just need to log on to the Internet.	මම 'ඒ ලෙවෙල්' එක පාරක් කරලා ඊළඟට ඉතිං ප්‍රශ්න වුණා. සුනාමි ඒවා මේවා. ඉතිං මම ඉන්නෙ මාතර. මාතර ඉන්නකොට දැන් කොළඹ වගේ ඇවිල්ලා වෙන ලොකු කෝස් එකක් කරනවට වඩා මේකෙ තත්ත්වයක් තියනවා, පළවෙනි පාරට පටන්ගත්තෙ, මට දැන් ගෙදර ඉඳන් තව වැඩ කටයුතු තියනවා කරන්න. ඒවාත් එක්ක කාලයත් එක්ක මට මේක කරන්න පුළුවන්. මට එකකොට මාතරම රැඳිලා තමයි කරන්න වෙන්නෙ. හැම තැනම ඇවිදින්න ඕනෙත් නෑනෙ මේක කරනකොට මට ඉන්ටර්නෙට් ලොග් වෙලා මේක කරන්න පුළුවන්නෙ.
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Box 8-48: Charith-25Y-M-Matara

Nirodha obtained a place for a course in a state university, but his marks only secured him a place at a university situated far from Colombo, and on a programme that was of little interest to him. As he was unable to follow the course while being employed in Colombo, he abandoned the course and registered in the OVU's DE programme (Box 8-49).

One reason is that I can follow this from Colombo itself. If I had not moved, I would have found myself in a very rural area away from Colombo. If I am in Colombo, I can study while doing a job. But I do not have that opportunity if I stay away from Colombo.	එක හේතුවක් නම් මි මට කොළඹ ඉදහෙත කරන්න පුළුවන් කම ලැබීම. කලින් තැන තිබියනම් කොළඹින් පිට ගොඩක් දුෂ්කර තැනක ඉන්න වෙන්නෙ. කොළඹ ඉන්නවනම් මට යම් රස්සාවක් කරන ගමන් මේක කරන්න පුළුවන්. අරහෙ තිබියනම්, කොළඹින් දෑත මට ඒ දේ කරන්න හැකියාවක් නැහැ
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Box 8-49: Nirodha-24Y-M-Colombo

In fact all interview participants except Chandrasiri and Himali stated that they would not have selected this programme if it was not offered online, because it would have been incompatible with their other commitments; but both Chandrasiri and Himali considered obtaining a degree from the OVU much more important than other commitments and reported they would “somehow” have followed it.

8.4.1.3 No Previous Opportunity for University Education

All but one of the interviewees (Nirodha) stated that they had unsuccessfully applied for entry to free full-time in-person courses at state universities; for example, Nishara (Box 8-40) and Himali (Box 8-45) described their unsuccessful efforts. Only 30% of questionnaire respondents reported failure to gain access to state university education as the reason for selecting DE. It would seem that students were reluctant to admit on the questionnaire to failure to gain admittance, although in interviews they were more forthcoming. It seems likely that a more significant proportion of the questionnaire respondents also failed to gain a place on an in-person course, and that the DE programme provided a substitute method of accessing HE.

8.4.1.4 Summary

Students had selected the OVU's DE programme for a variety of reasons. The flexibility of the programme and the prestige of the University were important determinants for their decisions. Previous denial of a higher education due to the lack of places in the state university system was another reason for selecting distance education. In addition to a

general desire to pursue a higher education, the job market benefit of having a degree was a strong motivating factor.

8.4.2 Readiness of the Learners

3.

- f. How well are they prepared for these programmes regarding skills, motivation and resources? (here resources refers to the availability of computers with access to the Internet)

8.4.2.1 Skills

Self Study

This programme was one of the first online degrees to be offered in Sri Lanka and students registering for the programme were not aware of how to study in an online environment. Despite the online nature of the course, many students initially expected/demanded face-to-face classes (Box 8-50).

At first, we did not know that this was an online course. During the first semester of the first year, we demanded for classes. At that time we thought that it would be very difficult for us to manage without classes. But by the end of that semester, all of us were doing fine. I mean, we all got the hang of doing self studies. As for classes... In our 2 nd year, they arranged classes for us, so that, if possible, we could get into groups and attend them. But now we wouldn't like that. I mean, we no longer need classes.	මුලදි ඉතිං ඕක ඔන්ලයින් කියලා හරියට දන්නෙ නෑ මොකක්ද කියලා. ෆස්ට් ඉයර් ෆස්ට් සෙමෙස්ටර් එකේදි අපි ක්ලාසස් ඉල්ලුවා. අපිට ඕන ඕන කියලා. නමුත් අපි දැන් දන්නවා ක්ලාසස් නැතුව හැන්ඩල් වෙන්න. ඒ කියන්නෙ ෆස්ට් සෙමෙස්ටර් එකේදි අපි හිතුවා ක්ලාසස් නැතුව අපිට හරි අමාරුවක් වෙයි කියලා. නමුත් ෆස්ට් සෙමෙස්ටර් එක ඉවර වුණාම අපට ඔක්කොට්ස්ම වගේ හරි ගියා. ඒ කියන්නෙ සෙල්ෆ් ස්ටඩීස් කරන්නෙ කොහොමද වගේ. මං හිතන්නෙ අපට දැන් ක්ලාසස්..... අපට සෙකන්ඩ් ඉයර් එකේදි ක්ලාසස් දුන්නා පුළුවන් නම් ග්‍රෑප් එකක් හැදිලා යන්න කියලා. නමුත් දැන් අපි කැමති නෑ. ඒ කියන්නෙ අපට ඕන නෑ දැන් කොහොමටවත් ක්ලාසස්.
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Box 8-50: Arjuna-23Y-M-Colombo

Even though this programme was offered fully online, the University officials and the CDL were flexible enough to offer help to students (who requested tutorial sessions), arranging a few face-to-face classes without any extra charge. This initial thrust had helped students to gain confidence and develop self-study skills, as well as to develop friendships with fellow students. Despite this help, many students, unable to cope with this new style of learning, abandoned the course or failed subjects. For example, according to official records (unpublished data shared with me by OVU technical officer during fieldwork visit), out of the cohort of 98 students who registered in 2007, only 36 remained with the same cohort

after 3 years. However, Arjuna thought that this was due to the rigorous requirements of the course and that “not everyone can complete a degree” (Box 8-51). As an Open University of Sri Lanka (OUSL) degree was considered ‘easier’, (not even requiring A/L for entry if following the foundation level) it was not highly regarded by the public.

There were 98 in our batch [cohort]. But now there are only 33. People drop off when the exams are tough, or when they have to repeat. This is what I mean. Anyone can get registered for the course. There are people from outstations as well. However for many people it is difficult to continue following the course. A Degree should have certain validity. Not everyone who gets registered for a degree can complete it. *If you join the Open University, may be you could.* But here, I feel that a certain standard is maintained [Emphasis Added].

අපේ හිටියා බැචි එකේ 98 ක්. දැන් ඉන්නේ අපේ 33යි. ඒ කියන්නේ එක්කුම් අමාරු වෙලා හැලෙනවා, රිපීට් කරනවා. ඒකයි මම කිව්වෙ. රෙජිස්ටර් වෙන්න හැමෝටම පුළුවන්. නමුත් අපේ බැචි එකෙන් දුෂ්කර පලාත් වල අය ඉන්නවා. නමුත් හුඟක් අයට කරගෙන යන්න අමාරුයි. ඩිග්රියක් වුණාම වැලිඩ් එකක් තියනවානේ. හැමෝටම ඩිග්රි ඔෆර් වුණා කියලා කරන්න බැහැ. අන්න ඒකයි මම අදහස් කළේ. මං හිතන්නේ ඕපන් යුනිවර්සිටි වගේ කලොත් නම් මම හිතන්නේ කරගන්න පුළුවන්. නමුත් ඉතිං මේකෙ යම්කිසි ස්ටැන්ඩඩ් එකක් තියනවා මම හිතන්නේ.

Box 8-51: Arjuna-23Y-M-Colombo

English Language Skills

Transition from a local language (either Sinhala or Tamil) in primary and secondary education to English in HE is a difficult step for students, especially those from rural areas. Some respondents appreciated the difficulties faced by fellow students from rural areas. For example, Himali (Box 8-52) and Charith (Box 8-53) stated that:

The basic thing is English. You can't manage without that. In Colombo and other urban areas of Sri Lanka, the students have a good English knowledge. But that is not the case in rural areas.

මොකද මූලික එක තමයි ඉංග්ලීසි. ඉංග්ලීසි නැතුව කරන්න බැහැනේ. දැන් ලංකාවේ කොළඹ, නාගරික පැතිවල ළමයින්ගෙ ඉංග්ලීසි දැනුම හොඳයි. නමුත් ගම්බද වෙන්න ඒක නැහැනේ.

Box 8-52: Himali-28Y-F-Galle

I had a sufficient knowledge of English, so I did not have to face any problem myself. But now I know that there are people who follow this Course from rural areas such as Anuradhapura and Medawachchi. When we go for exams, they say, “We don’t have any lecturers to explain these things to us...” [...] The English that you get here is not what is there in general usage. That is to say, what you get here is what pertains to this subject area, isn’t it? [...] Due to such things, the people from rural areas face lots of problems.

මට නම් ඉංග්ලිෂ් දැනීම තිබ්බා. ඒක නිසා එව්වරට ප්‍රශ්නයක් වුණේ නැහැ, ප්‍රශ්නෙකට මුණපාන්න වුණේ නැහැ. ඒ වුනත් දැන් මං දන්නවා ගොඩක් කව්විය ඔය මැදවව්විය පැත්තේ ඉඳලත් සමහරු කරනවා මේ කෝස් එක. අනුරාධපුර, මැදවව්විය ඉඳලා. දැන් ඒ කව්විය අපි එස්සැම් වලට එහෙම ගියාම ඒ කව්විය කියන දෙයක් තමයි ඉතිං අර දැන් අපට පැහැදිලි කරලා දෙන්න කවුරුවත් සරි කෙනෙක්, ලෙක්චරර් කෙනෙක් කවුරුවත් නැහැනෙ. [...] මේවයි කියන ඉංග්‍රීසි වුනත් අර සාමාන්‍ය ඉංග්‍රීසි නෙමෙයිනෙ. ඒ කියන්නෙ, කෝස් එකට අදාල විෂයට අදාල දේවල්නෙ. [...] අන්න ඒ වගේ වෙලාවට රුරල් ඒරියාස් වල කව්විය ගොඩක් ප්‍රශ්න වලට මුහුණපානවා.

Box 8-53: Charith-25Y-M-Matara

Charith's quote shows that some students were expecting direct help from experts, that is they expected social interaction in learning. Interview participants from areas other than the capital Colombo were quite concerned about students with language difficulties and empathised with students from rural areas. On the other hand, some respondents from Colombo assumed that everyone, when faced with the situation of (language) medium change, would be able to adjust to it “naturally”. For example, Arjuna stated that:

When getting into a degree programme after A/Ls, anyone would be scared. That is because you would have to study in English medium, and you would fear that that would prove difficult. But that automatically gets sorted out as you complete the 1st semester or so. Sometimes we get structured questions for the likes of which we have never answered in English; only in Sinhala. Even I was scared about how to answer an essay type question in English. But it would come to you naturally.

මුලින්ම ආත්ටර් ‘ඒ ලෙවල්ස්’ වලින් පස්සෙ ඩිග්‍රීයක් කරන කොට හැමෝම බියයි වගේ. මොකද ඉංග්‍රීසියෙන් කරන නිසා අමාරු වෙයිද කියලා නමුත් යනකොට ෆස්ට් සෙමෙස්ටර් එක වගේ ඉවර වෙනකොට ඔටෝ හරියනවා. ඒ කියන්නෙ ඒක හරියනවා. සමහර වෙලාවට ස්ට්‍රක්චර්ඩ් ප්‍රශ්න වගේ එනවා අපි ජීවිතේට ඒවා ඉංග්‍රීසියෙන් ලියලා නැ. සිංහලෙන් විතරයි ලියලා තියෙන්නෙ. නමුත් ඉතිං ඒවා ඔටෝ හැදෙනවා ෆස්ට් ඉයර් එකේදි. මාත් බිය වුණා කොහොමද රචනා ප්‍රශ්නයක් ලියන්නෙ ඉංග්‍රීසියෙන් කියලා. නමුත් ඒක ඔටෝ එනවා.

Box 8-54: Arjuna-23Y-M-Colombo

Because it was difficult to ascertain the level of English language proficiency from a self completion questionnaire, tutors’ views were also considered. Lasanthi, a tutor for the OVU’s DE programme expressed her views thus:

There are ones who are not familiar with using computers. Their English knowledge too is insufficient. [...] On the other hand, there are people with a good knowledge in subject matter as well as in English. *I think what matters the most is the person’s English knowledge.* [Emphasis Added]

කම්පියුටර් ඒ ගොල්ලන්ට සාමාන්‍යයෙන් යුස් කරන්න දන්නෙ නැති අය එහෙම ඉන්නවා. ඉංග්ලිෂ් පොඩ්ඩක් අප්පටි. [...] සමහරු ඉන්නවා හොඳට නොලේස් එකක් තියෙනවා, ඉංග්ලිෂ් ටෙනාලේස් එකක් හොඳයි. මං හිතන්නෙ ඒකට ගොඩක් වෙලාවට බලපාන්නෙ ළමයෙහෙ ඉංග්ලිෂ් ටෙනාලේස් එක.

Box 8-55: Lasanthi-Tutor

Lasanthi believed that English knowledge was vital for success. She linked good English ability with course related knowledge and claimed that students with good English ability were performing better than their counterparts. Madhavi, another tutor, expanded on her colleague's position:

When they are not competent in English, they can understand neither what we say nor what is there in the lessons. That is because everything is in English. When one cannot make use of any assistance that we provide, that person would find it difficult to follow the course. There are some students who drop the course due to this.	ඉංග්‍රීසි භාෂාවේ එක නැති වෙමින් ගමන් අපි කියන එක තේරෙන්නෙත් නෑ. ඊට පස්සෙ අපේ ලෙසන්ස් වල කියන ඒවා තේරෙන්නෙත් නෑ. මොකද තනිකරම ඉංග්‍රීසි වලින්නෙ අපි ඔක්කොම කරන්නෙ. ලෙසන්ස් තේරෙන්නෙත් නෑ අපි ප්‍රොවයිඩ් කරන කිසිම දෙයක් එයාට තේරෙන්නෙ නැති වුනාට පස්සෙ එයාට අපේ කෝස් එක ලොලේ කරගන්න අමාරු වෙනවා. සමහරු එහෙම වුණමත් අතරමග හැලෙන අයත් ඉන්නවා.
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Box 8-56: Madhavi-Tutor

Due to immense difficulties faced by students who were not competent in English, tutors regarded that English ability as a crucial factor that determined whether a student would continue the course or abandon it.

Computer Skills

The students of this online programme thought the required level of computer skills was relatively minimal to start it. However, it still required students to be able to use the Internet, email and other software such as Microsoft® Office.

Nirodha expressed the view that:

You do need IT knowledge to follow this course, but that does not have to be a comprehensive one. If you can connect to the Internet through Internet explorer, access Moodle, actually even we did not know how to use Moodle; we learnt as we went along. Other than that, if you can use normal email, and the Office packages such as Word, Excel and PowerPoint, then you can follow your course online.	අපි කරද්දි තේරෙනවා අයි.ටී.ඩී.එම්.එස්. එකක් කරන නිසා යම් අයි.ටී.කොලෙජ් එකක් අවශ්‍ය උනාට මේක කරන්න ගොඩක් ලොකු අයි.ටී.කොලෙජ් එකක් අවශ්‍ය නෑ. තෝමල් ඉන්ටනෙට් එක්ස්ප්ලෝරර් එක තරු ඉන්ටනෙට් යන්නයි. මුඩ්ල් එක ඇත්තටම අපිත් මුඩ්ල් යුස් කරන්න දැනං තිටියේ නෑ. යුස් කරද්දි තමයි කොහොමද, මොකදද මුඩ්ල් කියලා අපටත් තේරුණේ. ඊළඟට තෝමල් ඊංග්‍රීසි යුස් කරන විදියයි, වර්ඩ් එක්සෙල් යුස් කරන විදියයි පවර් පොයින්ට් වගේ ඔපිස් පැකේජස් ඒක යුස් කරන්නයි පුවත් නම් ඔන්ලයින් විදියට තමන්ගෙ කෝස් එක කරන්න පුවත්.
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Box 8-57: Nirodha-24Y-M-Colombo

Almost all respondents were able to handle the 4 tasks listed in the questionnaire to test their computer skills, depicting a very high level of computer skills among the respondents. This was not surprising, because these students were in the upper years of an ICT degree. As in the case of English ability, here too it was difficult to ascertain the level of computer skills amongst students by solely considering questionnaire results; questionnaire respondents

were the students who managed to continue the programme while students with low computer skills who initially registered for the programme may have abandoned it. Thus combining both students' as well as tutors' views was important in order to obtain a comprehensive understanding.

Tutors' assessments of the computer skills of students differed to that of the questionnaire analysis. As Box 8-58 shows, tutors have observed some students having difficulties even with basic computer skills; for example, one tutor reported a student who, in an inaugural session held to introduce the online learning platform, was not aware of how to type an "@" sign.

<p>Even this time, at that training, there was a student who did not know how to type the "@" sign on the keyboard. I showed it to him at that moment, but I doubt that he will remember it again. Because that student was somewhat nervous at the time, as he was very much behind all the others. When the others had already finished the activity, he was still at the beginning. So it is understandable that he would be scared, and I do not think he will remember the "@" sign even at a later time.</p>	<p>මේ පාරත් ඒ ට්‍රේනිං එක වෙලාවේ ළමයෙක් තිබියා කි බේට් එකේ 'ඇට්' සයිත් එක ගහගන්න දන්න නැති ළමයෙක්. දැන් ඒ වෙලාවේ මම ඒක කියලා දුන්නා. ඒ වුණට මම හිතන්නෙ නෑ ඒ ළමයට පස්සට ඒක මතක තියෙයි කියලා. මොකද ඒ ළමයන් ටිකක් බයවෙලා තිබියෙ කෝස් එක කරන වෙලාවේ. මොකද අනෙක් ළමයින්ට සාපේක්ෂව ඒ ළමයා ගොඩක් පස්සෙන් තිබියෙ. දැන් ඇක්ටිවිටි එක අනෙක් ළමයි ඉවරයි, ඒ වුණට තාම ඒ ළමයා පටන් ගන්න හිතන තැන ඒ ළමයා තිබියෙ. දැන් එහෙම වෙනකොට එයාට ඒ බයත් තියෙනවානෙ. එහෙම වෙනකොට මම හිතන්නෙ නෑ එයා දැන් ඊට පස්සෙ වුනත් 'ඇට්' සයිත් එක ගහගන්න පුළුවන් වේව් කියලා.</p>
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Box 8-58: Madhavi-Tutor

Keyboard skills are fundamental in using a computer and Madhavi's experience showed that there were students with very low levels of computer skills registered on this programme. Whether they have progressed with the programme or have abandoned it is yet to be established. In this respect, it can be seen that the Sri Lankan authorities' definition of computer literacy, which was discussed in Chapter 5, is inadequate for any degree using ICT. This is because the student could be "computer literate" because s/he is able to play a computer game on the computer, but that level of "computer literacy" is of no use for her/him to engage in a learning programme such as this.

Moreover, educational authorities seemed to focus on the "majority". For example, the following extract from an interview with a highly placed official in the MoHE shows that they had the pre-conceived idea that students leaving school after A/L had already gained adequate computer skills either from school or elsewhere. However, whether the high cost of private computer lessons is affordable to the "majority" or whether school computer labs

were appropriately utilized were issues that the authorities did not seem to be concerned about.

Normally A/L passing out [completing] students have adequate knowledge [in computer use]. [...] [A]ny student leaving A/Ls now have several certificates for IT. They spend money on getting certificates, I don't know the value of it, I mean the substance. But they have certificates. [Researcher: Even the Education Ministry has already given computer labs to most schools?] [Interrupting] One computer .. ah .. laptop per student [laughing] I think these are adequate, a few may be there who may not have computer literacy, but majority have. That is not a barrier. And also when you go there [NAC centre] there are several software you can start using and then you can learn.

Box 8-59: A Highly Placed Official at the MoHE

The assumption that when physical resources are available they will be utilized has been shown to be problematic in many instances (Warschauer 2003). However, the Sri Lankan educational authorities still seem to rely on injecting physical resources as a means to ensure the development of computer skills among Sri Lankans.

8.4.2.2 Motivation

The motivating factors for participating in this programme were discussed in interviews. Two respondents held high positions even though they lacked a degree. These students were highly motivated to complete the programme in order to be competitive in the job market, and to further secure their current positions. One of these students had started another DE degree programme, but had stopped it after only one semester as he had been doing it “for the sake of doing” and was not “dedicated” (Box 8-42). In fact, as DE is a lonely experience (even though chat, messaging, virtual group discussions allow community experience to a certain extent) a student's internal drive to complete the programme is of utmost importance. Another student had been searching for an online programme as he was unable to attend classes due to family and work commitments. He had investigated the prospects of registering with an online programme offered by a Singaporean Institute, which was cheaper than the OVU's programme, but had decided to register with OVU because it was a well-known local university.

As already discussed, there was one respondent (Nirodha) who had abandoned a place at a state university but was highly motivated to register with this programme because he wanted to study computing while being employed. He was in his final year of study with good grades. Therefore it can be seen that students needed the opportunity to progress in their field of interest rather than a field chosen for them on the basis of their A/L marks. Himali,

Charith and Shanil, having failed to secure places at a state university, had the internal desire to obtain a degree qualification. Thus it can be seen that from the interviews that the students were highly motivated.

As mentioned before, only 36 students out of the initial 98 student cohort remained with the same cohort at the end of the 3 years. The interview participants in the study were the students who remained in the programme for the whole 3 years. Thus, it is likely that all these students were highly motivated and had the internal drive to complete the programme. In obtaining a holistic view, tutors' views were also important. However, it is worth noting here that there are difficulties tracking students who have dropped out, especially because this is a part-time programme.

Lasanthi and Madhavi stated that there were different types of students: students with a high level of motivation as well as students who were not bothered. However, tutors in some instances have endeavoured to motivate students by sending them personal emails and phoning them (Box 8-60). Lasanthi also described an incident where she had followed up on a student to ensure submission of his assignment, because it was the last assignment and non-submission would have resulted in the student being ineligible to sit the exam. Therefore, when considering the whole cohort of the OVU students, there were a group of highly motivated students as well as students who required motivational support. This parallels Engler's (2000) observation that students who succeed in online courses are the focused, self-directed, independent and motivated.

<p>L: We can see the students' participation in the discussion forums and through that we can often understand whether they are active or not. There are those who actively participate in forums, but who do not do well in course work and do not get that good results. On the other hand, there are people who are not active in discussions, but who score well. However, there are times when those with no participation in forums do not perform well at all. The problem is, we do not have any means of motivating them.</p> <p>M: Then it would be through personal emails that we can...</p> <p>L: There are people who never check email.</p> <p>M: Yes, there are those who do not. That is true.</p> <p>L: Then the option is to call them, isn't it?</p> <p>M: There times when we have called them, to tell them to do certain things, and to give them information.</p> <p>L: That is to say, motivation. There is a group that we need to motivate. For example, there was this student, and if he had not submitted the final assignment, he would have lost his eligibility. I emailed him, and called him, and I almost had to force him to submit it. There is a group that is self-motivated, another that is neutral, and there is also a group that is not motivated.</p>	<p>ල: ගොඩක් අපිට ස්ටුඩන්ට්ස් ලා ඇක්ටිව් නෑද්ද කියලා බලා ගන්න පුළුවන් ඩිස්කස්ස් ලෝරම්ස් වලින්. ඒ කියන්නේ ඒ ගොල්ලන්ගෙ පාර්සිපේෂන් අනුව. සමහර අය ඇක්ටිව්, ඒ වුණොට කෝස් වර්ක් සහ රිසල්ට්ස් බැල්වහම එච්වරම නැති අයත් ඉන්නවා. වැඩිය ලෝරම්ස් වලට පාර්සිපේට් වෙන්නෙ නැතුව ඉන්න කම්මියත් හොඳ රිසල්ට්ස් ගන්නවා. හැබැයි පාර්සිපේට් නොවෙන කම්මිය නොකරනම් අවස්ථාත් තියනවා. පුශ්නෙ තියෙන්නෙ අපි ඒ ගොල්ලන්ව අපිට විධියක් නැහැ මෝටිවේට් කරන්න වගේ. එහෙම පුශ්නෙකුත් තියනවා.</p> <p>මා: එහෙම වුනොත් අපි පරිසනල් මේල්ස් දාලා තමයි අපිට...</p> <p>ල: ඊමේල් වෙක් කරන්නෙ නැති තත්වෙකුත් තියනවා.</p> <p>මා: ඔව්, සමහරු ඊමේල් වෙක් කරන්නෙත් නැහැ. එහෙම එකකුත් තියනවා.</p> <p>ල: එතකොට ඉතින් කෝල් කරන්න තමයි වෙන්නෙ නේ?</p> <p>මා: අපි සමහර වේලාවට ළමයින්ට කෝල් කරලත් කියන අවස්ථා තියෙනවා. මෙහෙම කරන්න, මේ දේවල් කරන්න තියෙනවා කියලා.</p> <p>ල: ඒ කියන්නෙ උනන්දුව... අපි උනන්දු කරලා ගන්න ඕන කොටසකුත් ඉන්නවා. දැන් උදාහරණයක් විදියට එක ළමයෙක් හිටියා එයාට අන්තිම අසයින්නම් එක ඒක සබ්මිට් කලේ නැත්නම් එයා එලිජ්බල් වෙන්නෙ නැහැ. ඊට පස්සෙ මම ඊමේල් කරලා, කෝල් කරලා බලෙන් වගේ තමයි අසයින්නම් එක ගෙන්න ගත්තෙ. සෙල්ත් මෝටිවේට්ඩ් කොටසක් ඉන්නවා, මධ්‍යස්ථ කොටසක් ඉන්නවා, එහෙම නොවෙන කොටසකුත් ඉන්නවා.</p>
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Box 8-60: Lasanthi and Madhavi-Tutors

8.4.2.3 Resources

Ownership of Computers and Printers

All interview participants and 85% of questionnaire respondents (Figure 8-17) owned computers (Note, as of 2009, computer ownership in the country was only 11.4%).

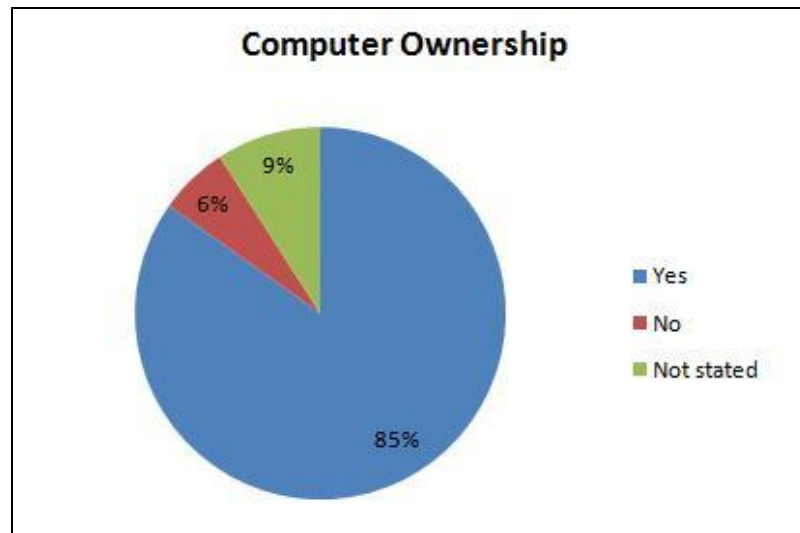


Figure 8-17: Computer Ownership

As can be seen from Figure 8-18, out of the respondents who owned computers, 54% also owned printers. That is, nearly a half of the students who owned computers did not have printers. This could be the reason why many students complained about having to print materials. A black-and-white laser-printed A4 sheet can cost from Rs.3 (1.5p) to Rs.100 (55p) depending on the location where the printout is obtained. For example, shops near universities charge a nominal fee whereas shops in rural areas or even towns other than the capital Colombo (for example, Galle) charge premium prices for printing. Therefore, if a student from a rural area is only comfortable with hardcopy for studying, that student would have to bear an exorbitant cost for printouts.

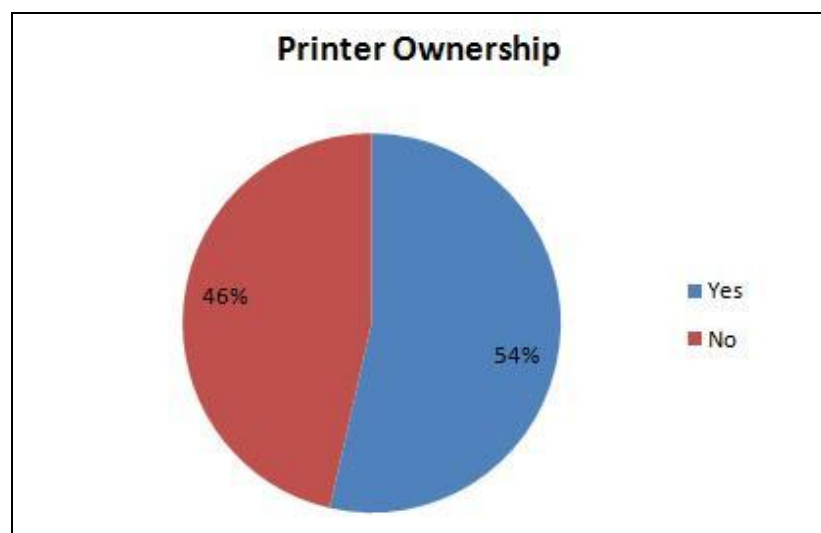


Figure 8-18: Printer Ownership

Opportunity to Use Computers

As can be seen in Figure 8-19, 64% of the respondents believed that buying and maintaining a home computer was expensive. This is in accordance with the survey findings by the PANdora network (Jamtsho, Rinchen et al. 2010b). Even though computer hardware has relatively come down in cost, it remains a significant lump sum outlay. There are credit card schemes and a scheme for school teachers to buy new computers on interest-free payment plans. Alternatively there are shops that sell used computers (as old as Pentium IIs) for affordable prices. Alpha Digital Pvt. Ltd. is a pioneer in selling used computers and it offers computers from Rs.5,000 (about £28). However, there is a growing concern that Sri Lanka may be being used as a dumping ground for computer waste (The Eye 2012; Sriyananda April 3, 2011) which does not bode well for the future.

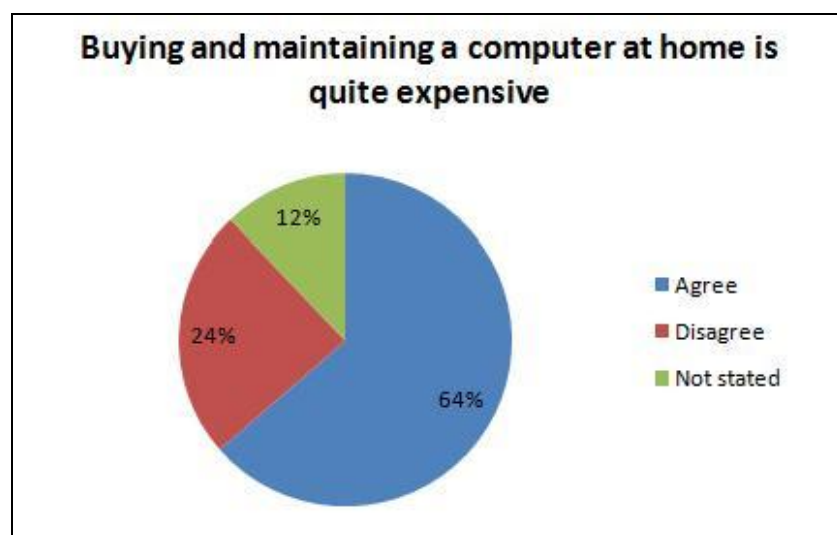


Figure 8-19: Maintaining a Computer at Home

Figure 8-20 depicts that 88% of the respondents used a computer daily while 3% used it several times a week. Despite this being an online programme, there were 15% of respondents who believed that it was not essential to have access to a computer for learning purposes (Figure 8-21).

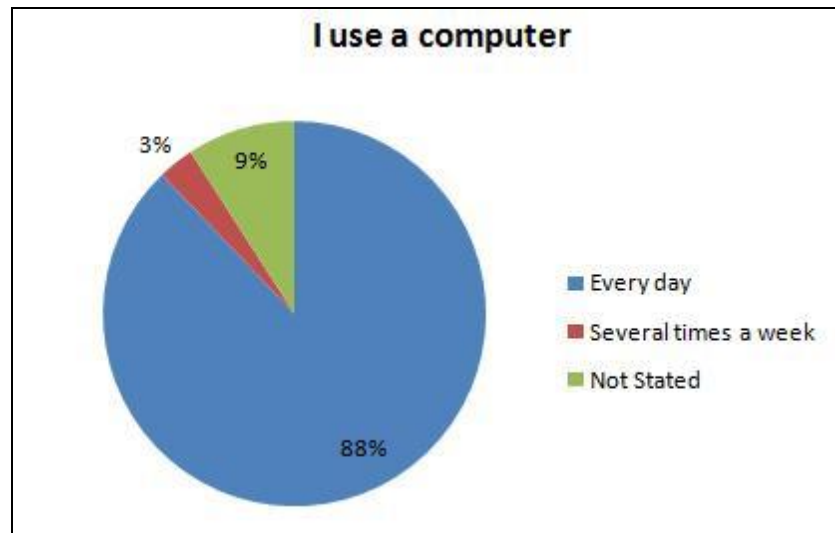


Figure 8-20: Frequency of Computer Use

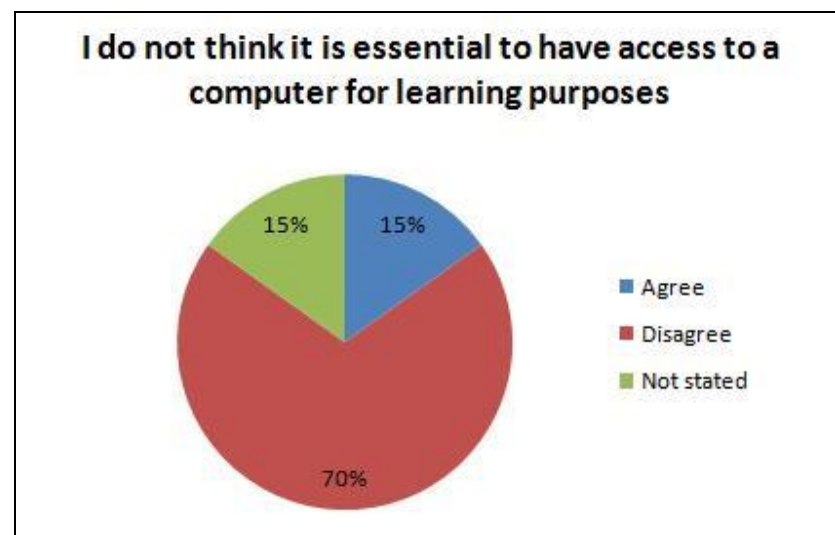


Figure 8-21: Not Essential to Have Access to a Computer for Learning

Connectivity to the Internet

All interview participants except one (who used a mobile phone to access the Internet) had broadband Internet connections. They all preferred ADSL (Asymmetric Digital Subscriber Line) connections to mobile broadband connectivity but were constrained due to the lack of availability of such connections. Two respondents used mobile broadband Internet using dongles due to the unavailability of ADSL connections in their areas. Only three interview participants had Internet connections when they started the programme: others initially used NACs or Internet-cafes but later acquired home access.

As shown in Figure 8-22, out of the questionnaire respondents 91% had Internet access from home (note: some students who did not own computers accessed the Internet using their phones), while 33% had access from a work-place. During one interview, a participant mentioned that his employer, a semi-governmental organization, had taken policy measures to ban Internet access for its employees due to security issues. The researcher's earlier work on acceptable use policies and employee computer misuse revealed that there was misuse of computers and the Internet by employees even when an acceptable use policy was in place (Liyanagunawardena and Samarasinghe 2008). This could be a reason for such low Internet access statistics at work – employers restricting Internet access by their employees due to misuse rather than lack of resources. Internet-cafes were used by nearly 21% of the respondents, mostly for occasional access.

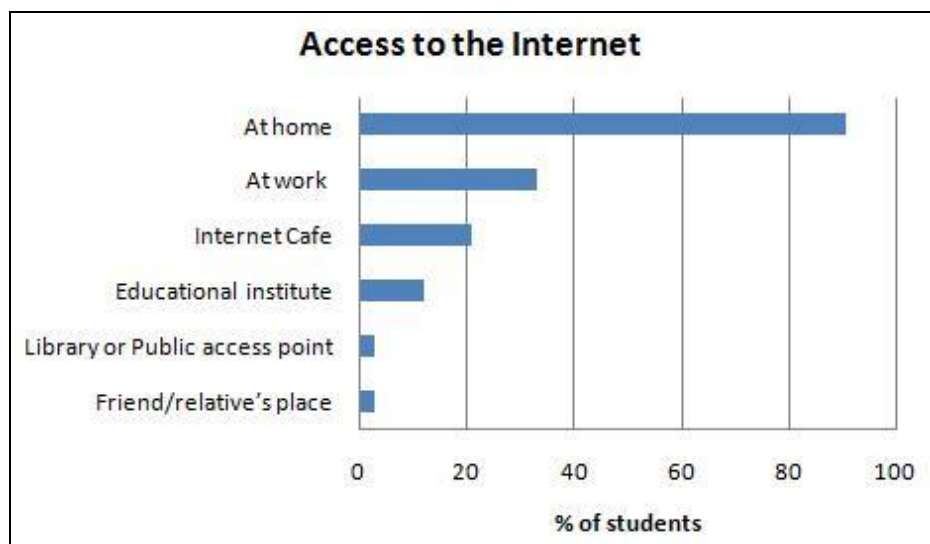


Figure 8-22: Access to the Internet

As can be seen from Figure 8-23, 91% of the questionnaire respondents accessed the Internet daily, while 3% accessed it several times a week.

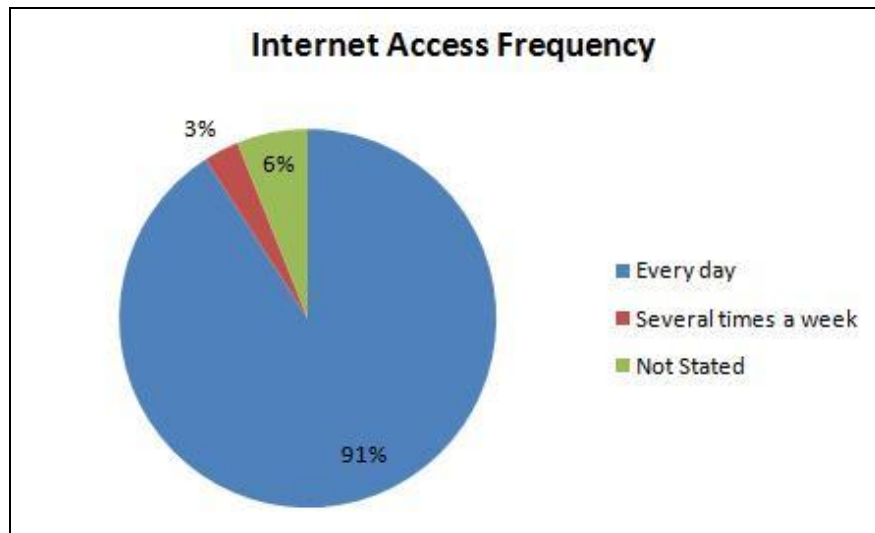


Figure 8-23: Internet Access Frequency

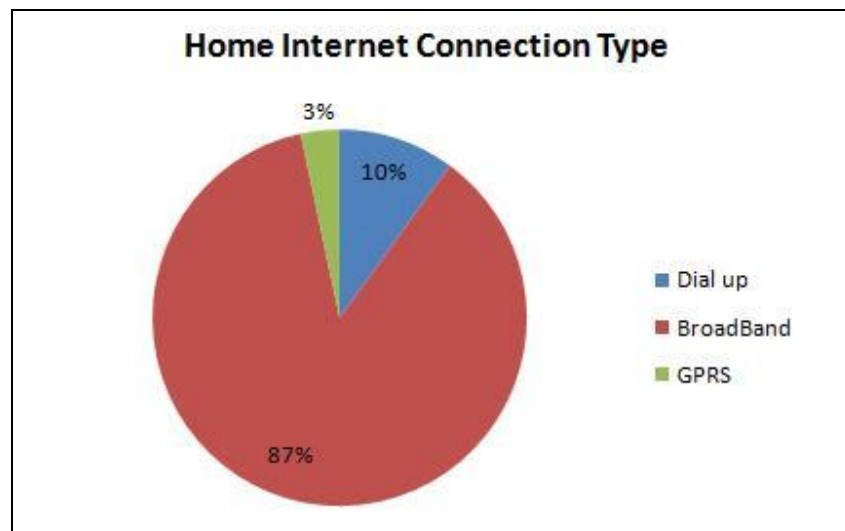


Figure 8-24: Home Internet Connection Type

As Figure 8-24 depicts, 87% of students' homes had broadband connectivity while 10% were connected via dial-up links and a 3% with GPRS. 73% of respondents agreed that maintaining an Internet connection for home computer was expensive (Figure 8-25). This is slightly higher than the number (64%) who agreed that it was expensive to buy and maintain a computer at home.

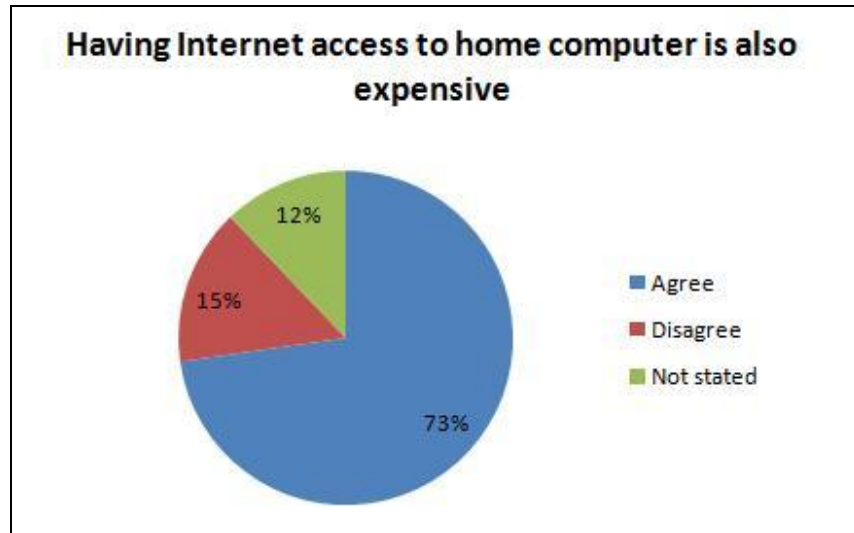


Figure 8-25: Maintaining Internet Access at Home

The interviewees considered Sri Lanka Telecom's ADSL connection packages to have better quality and speed than the mobile broadband connections offered by other service providers. However, ADSL lines are only available up to 3-5 kilometres around metropolitan cities so people living outside these areas have to use either dial-up or mobile broadband services. Since 2010 the Telecom Regulatory Commission of Sri Lanka has been performing its own tests to put into practice regulations regarding minimum speed, as it was found that Sri Lankan broadband service provides less value for money (Galpaya 2011) than other countries.

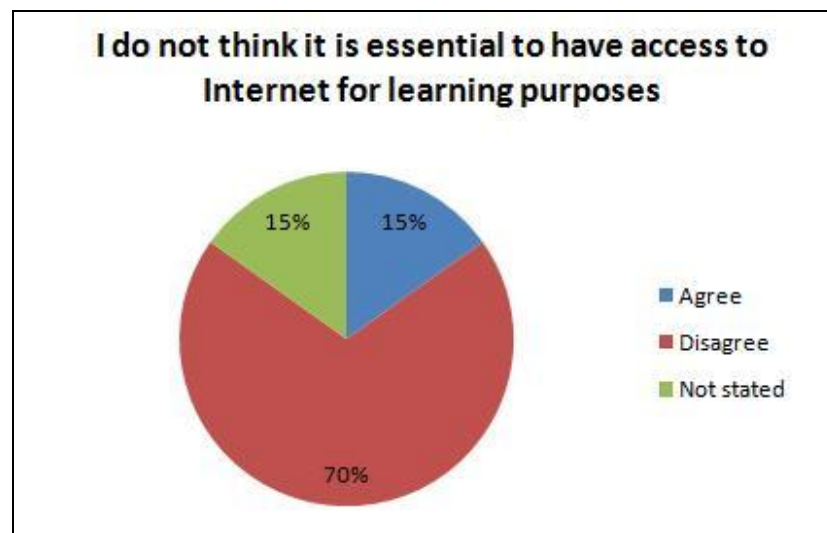


Figure 8-26: Not Essential to Have Access to the Internet for Learning

Respondents generally felt that access to both computers and the Internet was essential for learning, with little difference between the figures for these responses (Figure 8-26 above).

Software

The level of software piracy is high in Sri Lanka; in fact, it is the second highest in Asia (Sirimanna 2007), reported to be 86% in 2010 (Business Software Alliance 2011). Pirated software CDs are sold cheaply in the street market. This practice has allowed many Sri Lankans to be able to afford Microsoft® Windows® and Microsoft® Office, which otherwise would cost even more than the computer hardware. However, recent government regulations have put strict controls on software piracy and therefore now it is not common to see pirated software CDs on the market, albeit they are sold elsewhere.

Since the OVU students were following an IT degree they were required to use software such as programming languages and simulation software packages. None of the students seemed to have problems obtaining copies of that software. However, one student described an instance where he wanted to install TeamViewer® software on a NAC computer but was unable to obtain permission. As the student could afford an Internet connection and his area was serviced by ADSL, he had acquired an ADSL connection for his home computer instead of visiting the NAC.

8.4.2.4 Summary

Self-study skills were important for the OVU students as their programme was conducted online. Students with a good knowledge of English were better able to cope with the new style of learning while students with poor English struggled. The majority of students had good computer skills but there were a few who had not acquired even basic computer skills and thus faced problems in the programme. All interview participants were highly motivated but tutors reported that there were students whom they had to motivate and encourage. The ownership of computers was high but printer ownership was low. The large majority of students had broadband access to the Internet from their homes, with a minority using dial-up or GPRS connections. None of the respondents were constrained by the lack of software.

8.4.3 Characteristics of Students

This section presents the characteristics of the OVU students.

3.
 - g. What are the characteristics of students who have gained ‘access’ to higher education by this initiative [introduction of the OVU’s DE programme]?

Interview participants could be broadly categorized into two groups.

- Freshly A/L qualified who failed to secure a place at a state university
- A/L qualified and employed needing a degree qualification to retain/advance in career

The first group of interview participants commenced the programme as full-time students but later on became employed and continued the programme on a part-time basis. The second group consisted of mature students in their late 20s to early 40s, who joined the programme as employed part-time students. The details provided by students at course registration and details obtained through the questionnaire are juxtaposed in order to obtain a better understanding of the population demographics. Certain information such as marital status, income and employment status were not held by the University, thus they are presented only for the sample.

The registration details of the four cohorts of students for 2010 are as follows:

Table 8-6: Registration Details

Cohort	Registered Students	Gender	
		Male	Female
Cohort 01	89	58	31
Cohort 02	92	50	42
Cohort 03	89	60	29
Cohort 04	36	20	16
	306	188	118

8.4.3.1 Gender

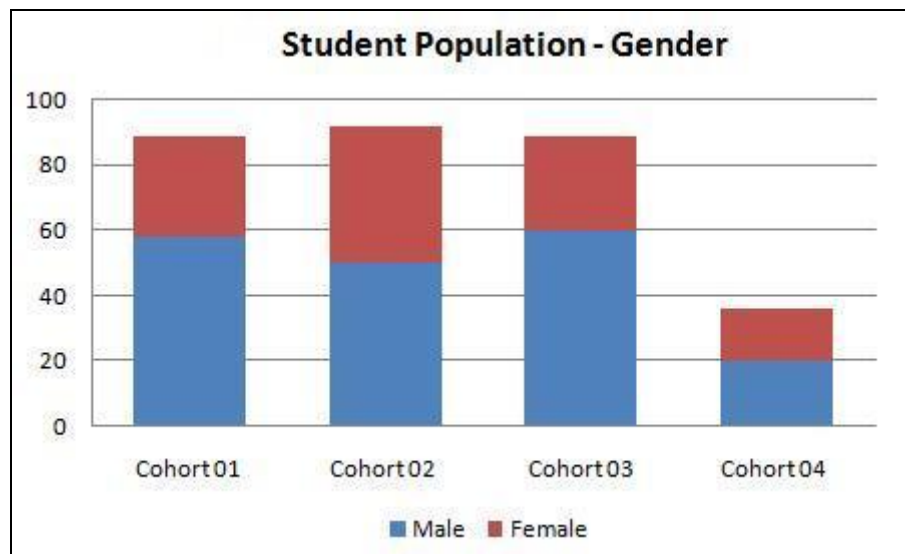


Figure 8-27: Population Gender (cohort-wise)

Figure 8-27 shows that male participation is higher than the female participation in each cohort. Figure 8-28 compares the gender distribution of the population and sample. The population's female representation was 39% and the sample was 33%. Female participation in the Sri Lankan IT industry is only 21% (Sri Lanka Information and Communication Technology Agency 2007); therefore 39% female participation in the OVU programme was encouraging, especially when compared with developed economies such as the UK where men outnumber women 5:1 in the IT sector (Pretorius and de Villiers 2009).

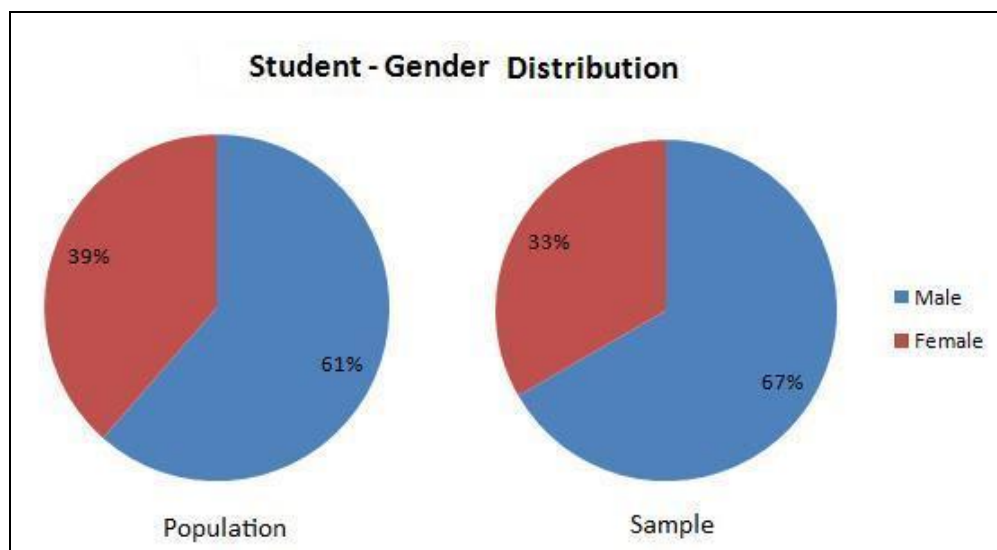


Figure 8-28: Gender Distribution – Population and Sample

8.4.3.2 Age

The age distribution of the cohorts of the OVU DE undergraduate student population is presented in Table 8-7 and Figure 8-29. The majority of students were 20-25, representing 58% of the total population. The next largest representation was the 26-30 age group (18%). This programme mainly targeted the A/L qualified who were unable to secure places at the state university system but the small majority of students from 20-25 age group suggests that the targeting of the programme has not been well received.

Table 8-7: Population Age (cohort-wise)

Cohort	Students by age (at the time of registration)				
	<20	20-25	26-30	31-35	>35
Cohort 01	3	50	12	11	13
Cohort 02	3	58	15	9	7
Cohort 03	6	49	21	9	4
Cohort 04	3	20	8	3	2
	15	177	56	32	26

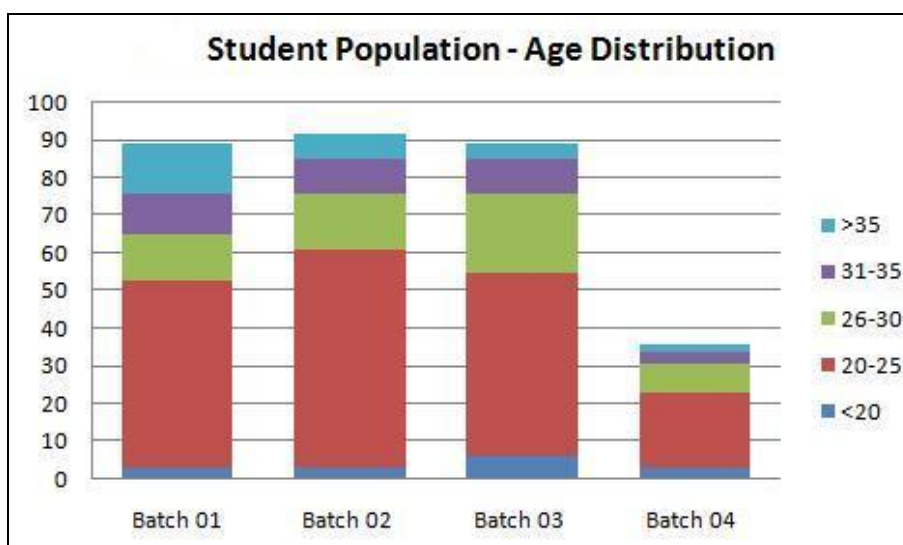


Figure 8-29: Population Age (cohort-wise)

Figure 8-30 shows the juxtaposition of population and sample age distribution. Similar to the population age distribution, the sample also has a majority of 20-25 age group.

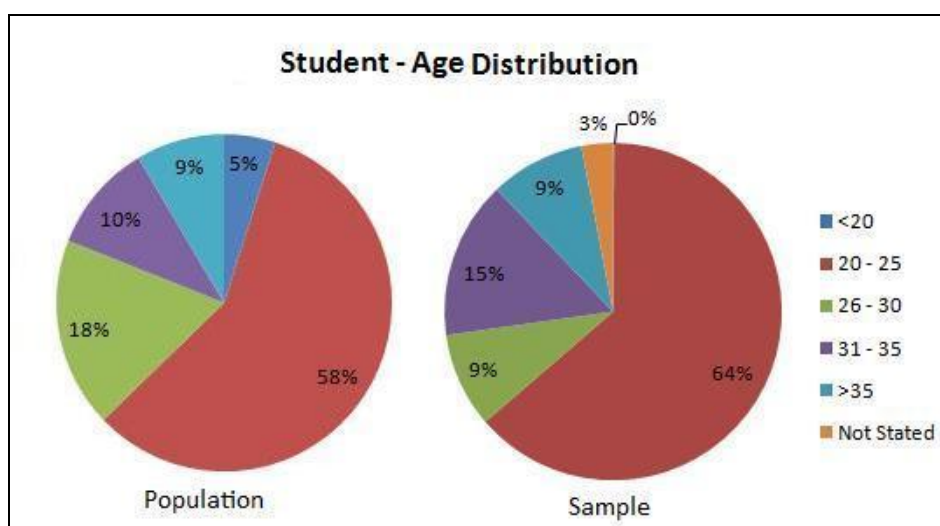


Figure 8-30: Age Distribution – Population and Sample

8.4.3.3 Geographic Location

The geographic distributions of the OVU students (Figure 8-31) showed that Colombo, Gampaha and Kalutara districts (or the Western Province) were overrepresented. There were very few students from rural districts such as Monaragala or Nuwara Eliya, and from the Northern and Eastern parts of the island. There could be a number of reasons for this, some of which are likely to be: the difficulty of accessing the Internet, the use of English medium and the lack of proper English language teaching in rural schools, students from the North and East not having access to Colombo during the periods of armed conflict.

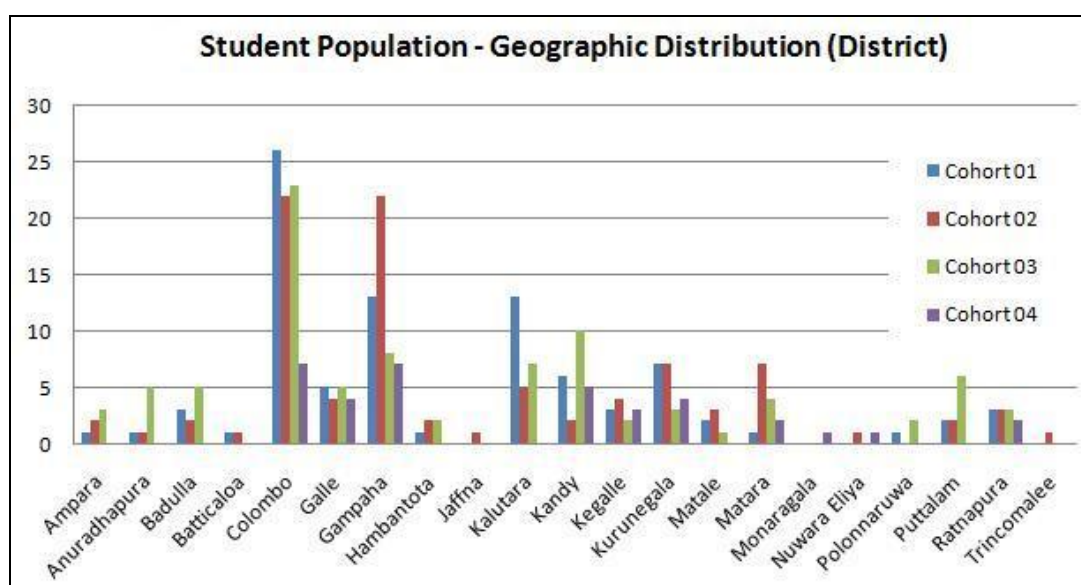


Figure 8-31: Population Geographic Spread (cohort-wise)

A comparison of population and sample geographic distribution in summarized form is presented in Figure 8-32. Half of the student population were Western Province dwellers; considering that only 28% of Sri Lankans live in the Western Province (Department of Census and Statistics Sri Lanka 2010a) this online DE programme seemed to be more appealing to them.

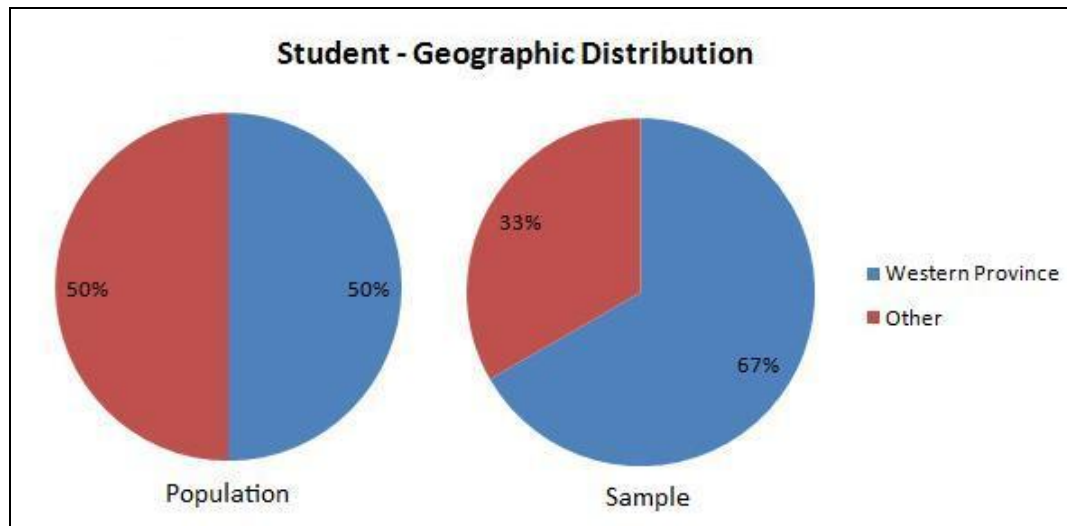


Figure 8-32: Geographic Distribution – Population and Sample

8.4.3.4 Marital Status

The majority of questionnaire respondents (79%) were unmarried (Figure 8-33). Other options such as divorced or separated were not listed in the questionnaire because such cases are rare in the Sri Lankan family environment and are considered taboo.

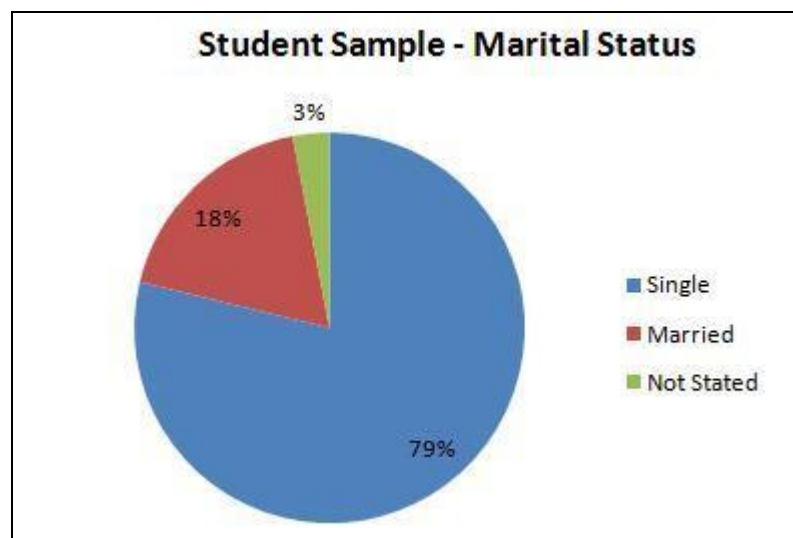


Figure 8-33: Sample Marital Status

8.4.3.5 Employment

As can be seen from Figure 8-34, the employment status of the sample revealed that 52% of the students were employed. This suggests that the need for a HE in order to be successful in today's work environment, as suggested by Castells (2000b; 2000a; 2004), Dahlman and Utz (2005), is felt by Sri Lankans. As stated earlier, some interview respondents had commenced the programme as unemployed school leavers but were later recruited especially as software developers. There is a rising demand for IT professionals in Sri Lanka and the university output of IT graduates does not fulfil this demand (Sri Lanka Information and Communication Technology Agency 2007). Thus it is common to see employers recruiting students studying for IT degrees.

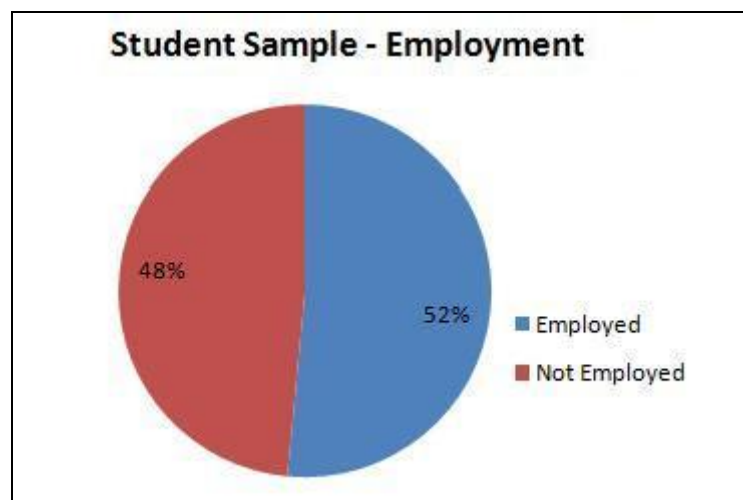


Figure 8-34: Sample Employment

8.4.3.6 Study Method

As depicted in Figure 8-35 below, 64% of students studied on a part-time basis; there were 30% of students registered in another degree programme whilst continuing the OVU's DE programme (Figure 8-36). However, data were not collected on the other degree programmes for which students were registered, or the number of credits they took part-time, thus hampering further analysis. The tutors stated that they believed that most of these students were full-time internal students of other state universities seeking better opportunities through an ICT degree from the OVU.

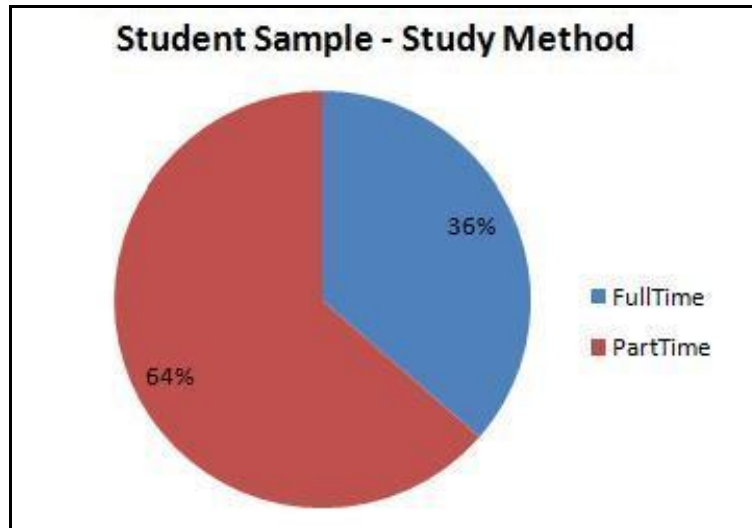


Figure 8-35: Sample Study Method

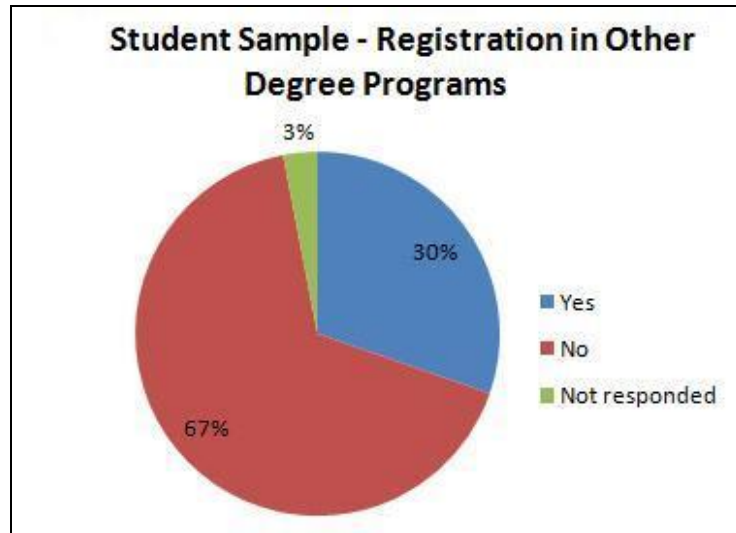


Figure 8-36: Sample Registration in Other Programmes

8.4.3.7 Income

Figure 8-37 presents the income distribution of the sample. Even though the questionnaire expected the respondents to fill in household income, it was observed and verified that some employed respondents had stated their own salary instead of the household income.

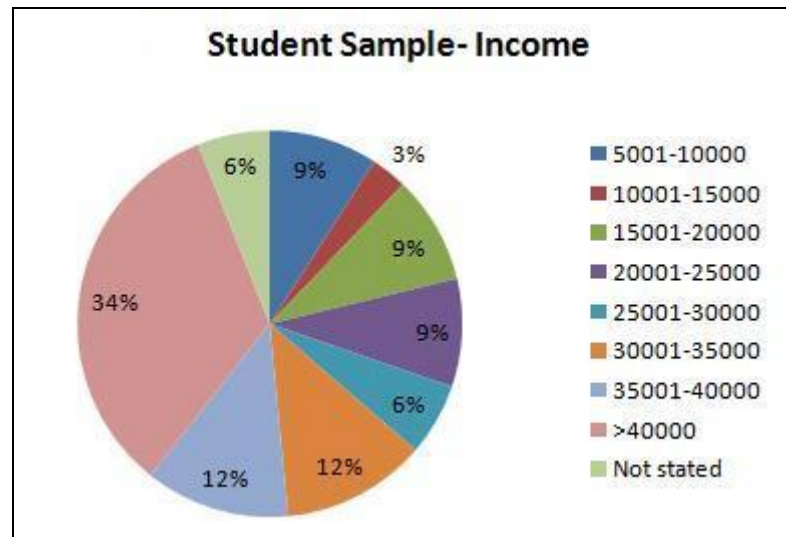


Figure 8-37: Sample Income

The median income was Rs.34,376 and 34% of respondents earned more than Rs.40,000 (about £225) a month. This is not surprising as the IT profession is one of the best paid professions in Sri Lanka. In fact,

[a]s employees gain in experience, salaries go up faster in the IT sector followed by the non-IT sector. Management Information Systems/IT Management, Project and Programme Management and Solutions and Technical Architects Job categories command the highest levels of salaries. Highly experienced professionals, with over 8 years of experience in any of the above job categories, can command between Rs.100,000 [£550] and Rs.300,000 [£1650] per month [information in brackets added].

(Sri Lanka Information and Communication Technology Agency 2007, p22)

Comparing this income to the mean Sri Lankan household income of Rs.36,451 (about £200), and the median household income of Rs.23,746 (about £135) (Department of Census and Statistics Sri Lanka 2011a), it is clear that many respondents were from higher-income families. Even if the median household income is considered to be Rs.25,000, then 63% of the students are from households earning more than the median household income. It should also be noted that in instances where the respondents have mentioned only their own salary, there could be others in the household who also contribute to the household income.

The programme fee of Rs 200,000 or Rs 215,000 payable in 3 instalments is higher than that of other comparable courses offered by state universities; for example, the Bachelor of Software Engineering programme offered by the Open University of Sri Lanka (OUSL) charges only Rs.180,000 (about £1000) and the entire tuition fee is payable in 6 instalments

over 3 academic years (The Open University of Sri Lanka 2010). Unlike the OVU programme, the OUSL programme offers face-to-face sessions, lab classes and most of all library facilities for students. It could be speculated that students from higher income families are more likely to register in OVU's programme as it is more costly. Students enrolling for HE in Sri Lanka were observed to be mainly from the higher income classes (Uturupane, Millot et al. 2009); this observation is also consistent with developed countries such as the US (US Department of Education - National Centre for Education Statistics 2008).

8.4.3.8 Summary

The OVU's DE programme offers about 90 places (a year) for HE in the field of IT, and both freshly qualified GCE A/L students as well as employed have embraced this opportunity. The majority of those who have gained access to HE through this programme are in the 20-25 year age group, unmarried male students from the Western Province with above median household income.

8.5 Increasing Opportunities

4. What are the strengths and constraints of the DE system implemented?

h. What are the difficulties faced by students in participating in these programmes?

Overcoming the resistance exerted by student movements and some traditional academics and implementing a DE programme in the conventional OVU in itself is a significant achievement that has opened more opportunities for students. By offering an online degree the OVU has taken a great risk, as this is a totally new concept to Sri Lanka and had only been implemented by one other university at the time of inauguration of this programme.

8.5.1 Difficulties

Many problems faced by students on the OVU's online programme were identified during qualitative interviews. Some respondents also used the space provided in questionnaires to state the difficulties they faced.

Lateral Entry and Lateral Exit

The programme was designed to allow lateral entry and lateral exit. However, up to the time of writing, lateral entry was not permitted as the academic standards of other institutes' qualifications had not been assessed for acceptance. Theoretically the introduction of lateral entry and lateral exit allows flexibility and can cater for a bigger student body. At the moment the University is evaluating the possibility of allowing lateral entry (Box 8-61).

[T]here has been a request from a government technical institution they provide a 2 year IT diploma for A/L qualified people. So those who have that diploma they have requested whether they can come in to a higher stage in our degree programme without starting from the very beginning. This is evaluated. In principle this is something that we wanted to have in our system. Lateral entry. So far it was not [...] Now the idea is that [to] see whether we can allow people with another qualification to come in.

Box 8-61: A Highly Placed Official at the CDL

Advertising

Some students of the OVU's DE programme strongly believed that there was a need for advertising to inform more students. For example, see Arjuna's quote in Box 8-62.

I think it is nothing but advertising. Another thing is people would consider the competency of graduates of this programme. I don't think there is any issue. When you say [redacted] everyone likes to get admitted there. Even I came because of that. Even though the name is there you still need advertising.

මට තිබෙන්නේ නම් ඉතිං ඇඩ්වර්ටයිසිං ම තමයි. අනික් එක පිටුවෙන බැච් ගැන බලනවා පොඩ්ඩක් ඉතිං. මං තිබෙන්නේ කිසිම අවුලක් නෑ. [redacted] කිරීමට කවුරුත් කැමතියි යන්න. ඕන කෙනෙක් එන් රෝල් වෙන්න කැමතියි. මම වූණත් අර ආවේ ඒකයි. නම වුනත් ඉතිං. ඇඩ්වර්ටයිසිං කරන්න ඕන. [...]

Box 8-62: Arjuna-23Y-M-Colombo

Arjuna further thought that it was important to satisfy graduating students, so that there would be goodwill and personal recommendations. He also acknowledged that anybody would be delighted to enter OVU, and that this was the reason for him joining the University. In fact, OVU would definitely benefit from some advertising on its DE programme. Private institutes offering comparable degree programmes such as the Informatics Institute of Technology (IIT), the Asia Pacific Institute of Information Technology (APIIT) and National Institute of Business Management (NIBM) are employing aggressive marketing campaigns in order to attract students, while OVU only publishes a notice in newspapers when calling for applications.

8.5.1.1 Internet Access and Other Resource Access

Accessing the Internet is of utmost importance for the students because all materials and support for this online programme is provided via Moodle™. Not being able to access it, even for a few days, could hinder students' progress as they would be unable to participate in ongoing discussions or could miss assignment deadlines. In the programme handbook it is clearly mentioned that students who register for this online programme are required to have ready access to the Internet. The tutors stated that before registration they advised students to be certain that they had an Internet connection with a good speed that they can access frequently; further they stated that after the programme commenced, students' complaints on inability to access the Internet would not be considered a valid excuse for non-performance.

Even though all students who participated in interviews had home Internet connectivity at the time of conducting interviews, many of them had used NACs and other public access services initially. Therefore, it was possible for them to recall the difficulties they had faced and relate to students who do not have home Internet connectivity.

- **Difficulties in using Internet-cafes**

Employed students were only able to access the Internet out of working hours (mainly late in the evening or at night) and over the weekend, but many Internet-cafes were closed late in the evening and some did not provide services over the weekend. On the other hand, even if the Internet-cafes were open till late, the public transport services outside the Colombo area are almost nonexistent after 8.00pm. For example, Charith explained why it was difficult to use an Internet cafe (Box 8-63).

Initially I went to [Inter]net cafes and did the work, but it was difficult. Therefore I got an Internet connection and it costs around Rs. 2000/= per month. [...] Earlier [when using Internet cafes] it used to be around Rs. 1000/=. But my results weren't satisfactory. I mean my knowledge was much less. For exams and all I don't have access to books and library facilities. Going to a cafe and searching for information and doing it the way we want is difficult. There was a problem like that and it was the main reason why I wanted to get an Internet connection. [...] It is difficult to do studies in an Internet cafe and it is difficult to go [to an Internet cafe] in the night when we get time.	මුලදී නම් නෙට් කැෆේ වලට ගිහිල්ලා ඒවා කලේ. එහෙම අමාරුයි. ඒක නිසා ඉන්ටනෙට් ගත්තා. මාසෙකට ඉතින් යනවා රු. 2000/= ක් විතර.[...] [ඉන්ටනෙට් කැෆේස් වලට යන දවස් වල] සාමාන්‍යයෙන් මාසෙකට රු. 1000/= ක් වගේ ගියේ. ඒත් ඉතිං අර රිසල්ට්ස් එහෙම අඩුයි. ඒ කියන්නෙ ගන්න මගේ දැනීම ගොඩක් අඩුවෙන් තිබුනෙ. ඒ කියන්නෙ එස්සෑම් වලට මට අර පොත් පත් එහෙමත් නැහැනෙ. ලයිබ්‍රේරි එහෙම නැත්නම් ඉතිං අර කැෆේ එකකට ගිහිල්ලා ඒවා සර්ච් කරලා අපට අවශ්‍ය විධියට එහෙම කර ගන්න අමාරුයි. අන්න එහෙම ප්‍රශ්නයක් තිබ්බා. අන්න ඒකයි ඉන්ටනෙට් ගන්න ඕන වුනේ. [...] ඉන්ටනෙට් කැෆේ එකකදි පාවිච්චි වැඩ කරගන්න විකක් අමාරුයි. අපට රාත්‍රී වුනත් යන්න අමාරුයි නෙ වෙලාවක් එක්ක
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Box 8-63: Charith-25Y-M-Matara

- **Cost**

Students were bearing travel expenses and printing costs as well as Internet connection charges. At NACs printing was provided free of charge for first-year students, and at a concessionary rate for the others, if students used their own paper. The issue of printing materials was presented earlier when discussing whether ICTs have reduced costs (see Box 8-2 and Box 8-3). OVU pays Rs.15,000 (about £84) per student per annum for the NAC facility. This amount is recovered from student fees and even the students who never used NACs were paying this amount. Even though students considered NAC services to be “free of charge” (Box 8-67), in real terms they were paying for these services.

- **Time**

Many students complained of traffic blocks and the lack of a reliable public transport service. As a result, students visiting NACs or Internet-cafes spent a considerable amount of time in transit. For example, Nirodha described his experience (Box 8-64).

Initially I too used the NODES access centre at Nawala. [...] It takes time to get there. Even after going there, we can spend only a limited time [within the opening hours]. No matter how early we start [the journey], due to bus traffic involved we only get little time to spend at the centre. Later on considering the bus fares and time spent I felt it would be more economical to continue studies by acquiring an ADSL connection.

මුලින් මමත්කළේ මේගොල්ලන්ගේ නාවල කියන නෝඩස් ඇක්සෙස් සෙන්ටර් එකක්. [...]එතනට අපිට යන්න වයිම් එක ගතවෙනවා.ගිහිල්ලා අනිත් එක අපට ඒ වෙලාව තුළ අපිටත් යම් ලිමිටඩ් වයිම් එකක් තමයි ගත කරන්න පුළුවන්.එතකොට අපි කොච්චර උදෙන් ගියත් බස් වූයින් හින්දා එතෙතට ගිහිල්ලා හෙඩ් වෙලාවක් තමයි තියෙන්නේ.පස්සේ පස්සේ ඊට වැඩිය ලාබයි කියලා හිතුණා බස් ගාස්තුයි, වියදම් කරන කාලෙටයි වැඩිය මේ ඒ.ඩී.එස්.එල්. කතෙක්කත් එකක් අරගෙන කරන එක ලාබයි කියලා හිතුණා.

Box 8-64: Nirodha-24Y-M-Colombo

• Quality of the Internet connection

The speed of connection was a major issue for students who accessed the Internet through Internet-cafes and they faced problems when downloading material (especially videos) from the LMS. Tutor interviews revealed that most of the time it was the students accessing from Internet-cafes who complained of problems with downloading materials (Box 8-65). As discussed in Chapter 4, Williams, Spiret, et al. (2012) also reported users' perceptions of delays in downloading.

L: There are many who request office night shifts and do their studies from the office. There are some who access Internet from their friends' places. Some access from outside.

M: From [Inter]net cafes.

L: Yes, there are some who access from them [Internet cafes]. They complain that they cannot download videos. When we investigate into it, we found that people who complained have tried to download them from [Inter]net cafes. There [at Internet cafes] the download speed is low.

ල: ගොඩක් අය මිලිස් එකේ නයිට් ෂිෆ්ට් එක අරගෙන කරන අයත් ඉන්නවා.යාළුවන්ගේ ගෙවල් වලින් ඇක්සස් කරන අයත් ඉන්නවා.පිටින් ඇක්සස් කරන අයත් ඉන්නවා.

මා: තෙරි කැලේ වලින්.

ල: ඒ වයෙන් ඇක්සස් කරන අයත් ඉන්නවා.මොකද ඒගොල්ලෝ කම්ප්ලේන් කරනවා ඒගොල්ලන්ගේ ඩවුන්ලෝඩ් ස්පීඩ් එක අඩු නිසා අපට කියනවා වීඩියෝස් එහෙම ඩවුන්ලෝඩ් වෙන්නේ නෑ කියලා.බලන කොට එයා ඇක්සස් කරලා තියෙන්නේ තෙරි කැලේ එකකින්.

Box 8-65: Lasanthi and Madhavi-Tutors

• Non-availability of Library resources

In Box 8-28 and Box 8-29 students described the difficulty of finding library resources that were relevant and up-to-date for their course. Students who were able to afford to buy books or membership at the British Council libraries located in Colombo and Kandy were at an advantage because the other students were left with only freely accessible Internet resources and course documents.

8.5.1.2 Issues in Using NACs

- **Opening Times**

According to students, NACs are only open during working hours from Monday to Friday and closed at the weekend. Students, especially employed students, complained of the opening hours of NACs. Even though this was stated as a problem, given sufficient notification NAC staff did try to accommodate student requests and to open their centres at the weekend. For example, Shanil sharing his experience of accessing the Internet using a remote (Badulla) NAC mentioned:

Generally they are closed on Saturdays and Sundays. But if we request they open the centre even on Saturday or Sunday.

එයාලා සාමාන්‍යයෙන් සැරිසරේ, සන්ඩේ ක්ලෝස්ඩ්. කිව්වොත් එයාලා සැරිසරේ, සන්ඩේ වුණත් ඕපන් කරනවා.

Box 8-66: Shanil-29Y-M-Badulla

However, it was observed that the opening times of many NACs were not supportive for employed students – more than a half of the population of the study.

- **Staff Competency**

NACs are equipped with state-of-the-art facilities but the staff at the centres were sometimes not trained to make maximum use of the available equipment. For example, Nirodha described his experience of using a printing facility at the NAC and how he was unable to obtain staff assistance (Box 8-67).

We can take blank A4 sheets and get printouts from NODES centre. During the First year we were able to get them printed free of charge. But we can't get duplex printout from there. We don't know how to do duplex printing on that machine. The staff there tells us that the machine does not support duplex printing. [...] When I got employed and went into the working environment I got to know that those machines actually have the facility for duplex printing. Even the staff there doesn't know that. As we printed on just one side of the paper we had to bear a greater cost.

බිලැන්ක් A4 ෂීට් ගෙනිව්වම තෝඩ්ස් සෙන්ටර් එකෙන් අපට ප්‍රින්ට් කරගන්න පුළුවන්. මුල අවුරුද්ද තුළ අපට ශ්‍රී ඔෆ් වාෂ් ප්‍රින්ට් කරගන්න අවස්ථාව ලැබුණා. එකක් නමයි එතන අර කොළේ දෙපැත්ත ප්‍රින්ට් කරගන්න බැරි වෙන එක. සමහර වේලාවට අපි දන්නෙත් නෑ ඒ කියන මැෂින් එකේ දෙපැත්ත ප්‍රින්ට් කරන්න කියලා. එතන ඉන්න කම්මිය කියන්නෙත් මේකේ ප්‍රින්ට් අවුර්ස් දානකොට දෙපැත්ත දාන්න බැහැ කියලා. [...] පස්සෙ අපි වර්කිං එන්වයර්මන්ට් එකට ගියාම දැන ගන්නා ඒ මැෂින් වල දෙපැත්ත ප්‍රින්ට් කරන්න පුළුවන්. එතන ඉන්න කම්මිය දන්නෙත් නෑ ඒ මැෂින් වල කොළේ දෙපැත්ත ප්‍රින්ට් කරන්න පුළුවන් කියලා. කොළේ තනි පැත්ත ප්‍රින්ට් කරපු නිසා වියදමක් වැඩියෙන් ගියා.

Box 8-67: Nirodha-24Y-M-Colombo

- **Limitations on Software Use**

NAC computers are equipped with a set of software that has been selected to offer a good service to its users. For the list of software available on NAC computers refer to Hettiaratchi

(2009, p11). There are copyright issues with installing software, which are largely ignored (either deliberately or due to ignorance) by many Sri Lankans. Students generally use pirated versions of software on their computers mainly because they cannot afford original software licensing fees. When students who were using NAC facilities wanted to use software other than those that were installed, there was no such option. Thus, students who could afford to acquire Internet connections left the NAC facilities; for example, Nirodha describes his experience (Box 8-68) and Nishara discussed difficulties faced by other students (Box 8-69).

We were not allowed to use software such as “TeamViewer” at the NODES centres. We were unable to install software we required due to limitations at the centres. It is not only the Internet facility that we use, we also use screen sharing software such as “TeamViewer”. But we can’t use those there.	අපට ‘ටීම් වීවර්’ වගේ සොෆ්ට් වෙයාස් යුස් කරන්න ඉඩ දුන්නෙ නැහැ නෝඩ්ස් සෙන්ටර්ස් වල. ඒ ගොල්ලන්ගෙ යම් යම් සීමාවන් තියනවා එතකොට අපිට ඕන කරන සොෆ්ට්වෙයාස් අපට නෝඩ්ස් සෙන්ටර්ස් වල දාගන්න බැහැ. අපට ඉන්ටනෙට් ෆැසිලිටි එක විතරක්ම නෙමෙයි ‘ටීම් වීවර්’ වගේ ස්ක්රීන් ෂෙයාරින් සොෆ්ට්වෙයා වගේ අපි යුස් කරනවා. එතන ඒවා යුස් කරන්න බැහැ.
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Box 8-68: Nirodha-24Y-M-Colombo

People who do not have computers at home faced difficulties. They were accessing from places such as Nenasala [telecentre], but they were not allowed to install software there. Such administrative issues affected this course.	අර කම්පියුටර්ස් ගෙදර නැති අයට ඒ වගේ ප්‍රශ්න වුණා. ඒ ගොල්ලො නැණසලවල් වගේ ඒ වගින් තමයි ඇක්සස් කලේ. ඒවගේ ඉන්ස්ටෝල් කරන්න බැරි ප්‍රශ්න ඒ වගේ ඇඩ්මිනිස්ට්‍රේටිව් ප්‍රශ්න නිසා මේකට බලපාපු අවස්ථා තිබුනා.
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Box 8-69: Nishara-41Y-M-Kalutara

• Limited Access Time

Even though there are 26 NACs only a few of them are in demand by students; so rules have been imposed to allocate available time on a fair basis. According to Chandrasiri who was using a NAC in Colombo, students were allocated one time slot per week. However, according to his experience, when there were no users at the centre, even if a student had already used up their quota, use of the facilities was permitted (Box 8-70).

For our programme NODES Centre access was allowed free of charge. But there was a limitation that we could use it only once a week. There were very few who used it. Therefore, there was not much crowd and we could go there anytime.	නෝඩ්ස් සෙන්ටර් එකේ ඇක්සස් ශ්‍රී දිලා තිබුණෙ අපේ ප්‍රෝග්‍රෑම් එකට. හැබැයි මේකක්ද ලිමිටේෂන් එකක් තිබුණා සතියකට සැරයක් යුස් කරන්න පුළුවන් කියලා. ඒක යුස් කරපු කවරිය ටොහොම වීක දෙනයි හිටියේ. ඒක හින්දා එව්වර ලොකු ක්‍රවුඩ් එකක් නැහැ. ඉතිං අපට ඕන වෙලාවක යන්න පුළුවන්.
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Box 8-70: Chandrasiri-32Y-M-Colombo

8.5.1.3 Course Fee

As demonstrated previously, the OVU's DE programme was more expensive compared to the other similar programmes. Interview participants commented on the high cost comparing it to similar programmes offered by for-profit Singaporean institutions in Sri Lanka (Box 8-71).

Cost wise, one would find this course a little more expensive than others. But I selected this because this is a Sri Lankan program. Most of the time one can find Singaporean Institutes' courses offered rather cheaply in Sri Lanka	කොස්ට් පයින් බැල්වහම ඇත්තටම මේක අනෙක් ඒවට වැඩිය වැඩියි ඒකක්.ඒත් මේක තෝරන්නේ මේක ලංකාවේ එකක් නිසා.හුගත් වෙලාවට සිංගප්පෝ ඉන්ස්ටිටියුට්ස් වල ඒවා එහෙම ලංකාවේ මිලට් කරනවා අඩු මුදලට.
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Box 8-71: Nishara-41Y-M-Kalutara

Even the students in the highest income category (>Rs.40,000 per month) felt that the programme was too costly, and expressing his view on low uptake of the programme Chandrasiri mentions:

There is a little issue. One thing is the cost of the programme. This is an introduction to online programmes in Sri Lanka and I think the fee is a little too high.	පොඩි ප්‍රශ්නයක් තියනවා.එකක් තමයි කොස්ට් එක.මං හිතනවා මේක ඔන්ලයින් ප්‍රෝග්‍රැම් එකකට ලංකාවේ ඉන්ට්‍රඩක්ෂන් මට හිතෙනවා ගාන පොඩ්ඩක් වැඩියි කියලා කොස්ට් එක පැත්තෙන් බැල්වෙත්.
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Box 8-72: Chandrasiri-32Y-M-Colombo

8.5.1.4 Course Materials

• Erroneous Materials

This DE programme is the first DE programme offered by OVU. All course materials were prepared specifically for this programme and according to the University officials, materials were quality-assured before being uploaded to the servers. However, students from the very first cohort of the programme referred to many instances where they found the course materials to be erroneous. For example, Nirodha described how he was confused as to whether to believe materials he found on the Internet (from sites he believed to provide accurate information - Box 8-73) or the course documents provided by the University. The difficulties faced by DE students when faced with erroneous material is clear from Nirodha's statement. This in fact ties the discussion back to Keegan's idea that "[a] bad course written by one teacher which will be studied by 10000 students will do more harm than the oral

instruction of the same teacher in class room” (Keegan 1994, p31); this shows the importance of the quality of the material in DE.

<p>In our first year of study, we came across several errors in the lessons. May be it was because we were the first batch [cohort] to follow this course. We could not even identify those as errors. When we referred the Internet, what we found there contradicted what was there in our lessons; and we would be in a dilemma, not knowing what was correct. Therefore, when answering an exam question or writing an assignment, we were again confused as to what we should write there. Later on we decided to answer the questions with the exact information we found in our tutorials, and to indicate below that the answer was based on the tutorial. [...] With regard to subjects like Programming, the information in our tutorials drastically differed from what was there in such reliable sites. At times, we never even saw that there was an error, as we ourselves were ignorant of it. But there were some students who were into programming, and they would tell us that such and such errors were there in the tutorial and that it should be like this and not like that. Unless and until they pointed out such things to us, we would go on believing what was there in the tutorial and studying it.</p>	<p>අපි ෆස්ට් බැච් එක හින්දා දන්නෙ නෑ අපිට මුලින් මුලින් පළවෙනි අවුරුද්ද තුළ ආපු ලෙසන්ස් වල සමහර පොඩ් පොඩ් එරස් තිබ්බා. ඒවා එරස් කියලා අපට හොයා ගන්නත් බැහැ. අපට ඉන්ටනෙට් එක රිසර් කරද්දි ඉන්ටනෙට් එකේ තියන එක නෙමෙයි ඒ ලෙසන් එකේ තියෙන්නෙ. එතකොට අපි ගැටළුවකට මුහුණපානවා අපිට දිපු රියුට් එකේ තියන එකද හරි ඉන්ටනෙට් එකේ තියන එකද හරි කියලා. එතකොට සමහර එස්සෑම් ක්වෙස්චන්ස්, අසයිමන්ට්ස් වලට උත්තර ලියද්දි අපිට ප්‍රශ්නයක් එනවා අපිට දිපු රියුට් එකේ තියන දේද ලියන්නෙ ඉන්ටනෙට් එකෙන් හොයාගත්තු දේද ලියන්නෙ කියලා. අපි පස්සෙ තීරණය කලා රියුට් එකේ තියන දේම ලියලා අපි පල්ලෙහායින් ලියනවා මේක රියුට් එකේ තිබුණ දේ කියලා. [...] ප්‍රෝග්‍රෑම් වගේ සබ්ජෙක්ට්ස් වලදි ලොකු වෙනස්කම් තිබුණා. අපි සමහර වෙලේට දන්නෙ නැති නිසා අපට ඒක වැරද්දක් කියලා හොයාගන්නත් බැහැ. සමහර ස්ටුඩන්ට්ස්ලා හිටියා ප්‍රෝග්‍රෑම් කරන. එයාලා කියනකල් මේක රියුට් එකේ වැරදියි, මේක මෙහෙම වෙන්න ඕන කියලා අපි දන්නෙත් නැහැ අපි රියුට් එකේ තියන දේ හරි කියලා ධාරණය කර ගන්නවා.</p>
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Box 8-73: Nirodha-24Y-M-Colombo

Shanil mentioned another instance where students found a course note to be erroneous. He was not happy with the way the University handled the situation when it was pointed out (Box 8-74).

• **Substandard Materials**

Students of the OVU’s DE programme have discovered that some of their course notes were copied from Wikipedia® (Box 8-6). They also complained of notes that were not properly organized (Box 8-75) and quizzes that posed the same set of questions on each and every attempt (Box 8-38).

Some of the notes we got contained incorrect information. One note that we got for Maths, in the second year, was completely wrong. I have studied Bio science, so I did not know this. But I have a friend who has a degree in Physical Science, who is also following this course. He had understood the errors in the note, and he had emailed them informing about it. Their reply to him had been to come and to point out the errors to them. One student had actually gone there and pointed out the errors; and they had told him that if an exam question was based on that part of the note, they would be fair to the students in marking it, but if not, they had advised him to forget about it. That particular student knew what was correct, so he understood the mistakes in the note. But we did not, and we would have gone on studying incorrect information. Even in programming, if they had given any wrong information in the note, we would not know, and we would go on to make the same mistake.

සමහර තෝරිස් වැරදි අපේ. අපට දිපු Maths 2nd Year තෝරි එකක් එහෙම පිරිනිම වැරදි. මම බයෝ කලේ, මම දන්නෙ නෑ. මගේ යාළුවෙක් ඉන්නවා එයා පිසිකල් ඩිප්ට්මන් කරපු කෙනෙක්. එයන් මේ ඩිප්ට්මන් කරනවා. එයා දන්නවා. එයා මේල් එකක් දාලා තිබුණා ඔයාලගෙ තෝරි එක වැරදි කියලා. ඊට පස්සෙ එයාලා කියලා තිබුණා තෝරිස් වැරදිනම් ඇවිල්ලා ඒක පෙන්නලා දෙන්න කියලා. එක ළමයෙක් ගිහිල්ලා කිරිවට පස්සෙ මෙනන වැරදි කියලා එතකොට කියලා කියනවා ඒකෙන් පුශ්නයක් ආවොත් විභාගෙට අපි සාධාරණයක් කරන්නම්, නැත්නම් ඔයා ඕක අමතක කරලා දාන්න කිව්වලු. එයා දන්න නිසා ඒක කිරිවා. අපි දන්නෙ නෑ. ඒක නිසා අපි ඒ වැරදි දේ තමයි ඉගනගන්නෙ. ඒක ප්‍රෝග්‍රැම්න් වල වුණත් එයාලා වැරදි එකක් දිලා තිබ්බොත් අපි දන්නෙ නෑ. අපිත් ඒ වැරද්ද කරනවා.

Box 8-74: Shanil-29Y-M-Badulla

For instance, some of the notes have just been copied out from the Internet, and are not at all organized. I think ours is the pioneering IT degree programme in Sri Lanka. As an IT degree is directly related to the field of technology, it needs to have a higher standard than any common B.Sc. degree. The lack of such a standard and the existence of a few problems with regard to the course may discourage people.

සමහරක් තෝරිස් වල කියන පුශ්න, ඒ කියන්නෙ හදපු තෝරිස් තෙමෙයි ඉන්ටනෙට් එකෙන් කොපි කරලා එහෙම පිරිනිම දාපු ඒවා කියනවා. ඒවායි පිළිවෙලක් නෑහැ. එතකොට අපි තමයි පළවෙනිම මං හිතන්නෙ අයි.ටී. වල්න් යන පළවෙනි එක ලංකාවෙ ඉතිං දැන් ඇත්තටම අයි.ටී.ඩිප්ට්මන් ටෙක්නොලොජි පැත්තෙ එකක් උනහම නිකං ඩී.එස්.සී. නිකං ප්‍රෝග්‍රැම් එකකට වඩා ස්ටෑන්ඩර්ඩ් එකක් තියෙන්න ඕන. ඒ ස්ටෑන්ඩර්ඩ් එකක් නැති හා කියන අඩුපාඩු පුශ්න ටිකක් එතන කියනවා. ඒ වගේ ඒ වයිත් සමහර වේලාවට කම්පිය අධ්‍යයමත් වෙන්න පුළුවන්.

Box 8-75: Chandrasiri-32Y-M-Colombo

Course materials were primarily provided as PDF files containing black-and-white texts. Students have seen other interactive and easy-to-understand materials on the web. Charith referred to one of the modules that provided multimedia content and how easy it was to understand the lesson with the help of those materials (Box 8-76).

It is better if video lessons can be provided rather than uploading PDFs. Once we were given those for the Multimedia module and we know it is better because of that. When the lecturer explained it [on video] it is much easier to understand and remember than reading and understanding a note. Even before I mentioned [to you] that we don't have anyone to explain materials to us. It is a big problem for us. As we follow this course online and in distance learning mode, we can't go to a person to have something explained. Therefore if things are given in a form easier to understand it is of great value.

අර පි ඩිජිටල් වගේ රිසෝස්ස් අප්ලෝඩ් කරන කොට දැන් ඒ වගේ ඒවට වඩා හොඳයි විඩියෝ ලෙසින්ස් වගේ දෙන්න පුළුවන්නම්. එක පාරක් අපට දිපු නිසා ඒක තේරෙනවා. අපට ගොඩක් පැහැදිලි වෙනවා එතකොට කියලා දෙන දේවල් 'මල්ටි මිඩියා' මොඩියුල් එකේ අපට තිබුණා විඩියෝ ලෙසින්ස් එතකොට ඒ සර් පැහැදිලි කරලා දෙනකොට පාවිච්ඡා කියවලා තේරුම් ගන්නවට වඩා ඒක අපට ගොඩක් ඔප්වට වදිනවා, තේරුම් යනවා යම්කිසි දෙයක් එහෙම කියලා දෙනකොට. අර ඉස්සෙල්ලක් මම කිව්වනේ අපට කියලා දෙන්න කෙනෙකුත් නැහැ ඒවා තමයි ලොකු ප්‍රශ්න කියලා. ඒ වගේ නිසා දැන් ඔන්ලයින් එකක් ඩිජිටල් ලූර්නිං එකක් නිසා අපිට ගිහිල්ලා අහගන්න විදියක් නෑ. ඒක නිසා ගොඩක් තේරුම් පැහැදිලි කරලා දෙනවානම් ඒක ගොඩක් වටිනවා.

Box 8-76: Charith-25Y-M-Matara

L: As I see it, our learning materials could be improved. We only provide a PDF note. If that is converted to instructional design it can be presented in a way that is attractive to the students. Especially simulations can be used for the practical component. We don't have such methods at the moment. We just provide a PDF.

M: Just a normal PDF

L: Note in a PDF format

ල: මම දකින විධියට, අපේ ලූර්නිං මැටීරියල්ස් අපට ඉම්පරුවා කරන්න පුළුවන්. අපි පී.ඩී.එල්. තොර් එකක් විතරයි ප්‍රවයිඩ් කරන්නේ. එතකොට ඒක ඉන්ස්ට්‍රක්ෂනල් ඩිසයින් වලට කන්වර්ට් කරලා, රිසෝස්ස් ස්ටුඩන්ට්ස් වලට ඇට්‍රැක්ටිව් වෙන විධියට දෙන්න පුළුවන්. විශේෂයෙන් ප්‍රැක්ටිකල් කම්පෝනන්ට් එක සිම්ියුලේෂන්ස් වලින් ඉදිරිපත් කරන්න පුළුවන්. දැනට අපේ එහෙම ඒවා නැහැ. We just provide a PDF.

මා: නිකං නෝමල් පී.ඩී.එල්.එකක්.

ල: Note in a PDF format

Box 8-77: Lasanthi and Madhavi-Tutors

Even the tutors felt that the learning materials required improvement (Box 8-77). However, it is not an easy task designing and developing DE course materials with instructional design. In fact, Andersson and Groulund (2009) reported it to be a major challenge for developing countries.

8.5.1.5 Tutor Competency

The CDL has hired only a few full-time tutors with good degree level results to provide online tutoring. These tutors were trained at a workshop on online tutoring and mentoring. However, none of the students had a good impression of the service of these tutors. Some students have interpreted this as incompetence on the part of the tutors (Box 8-78).

<p>We communicate with online tutors. It seems as if they lack knowledge on the subject matter. Most of the time when we ask them a question, they need to get it verified from the examiner and then only would answer us. That takes long.</p>	<p>ඔන්ලයින් ටියුටර්ස්ලත් එක්කනෙ අපි කමියුනිකේට් කරන්නෙ. එතකොට ඒ ඉන්න අයගෙ ගොඩක් අදාල සබ්ජෙක්ට් එකට තියන දැනුම මදි වගේ, අඩු කමක් තියෙනවා. ගොඩක් දුරට ඒ කට්ටියට ප්‍රශ්නයක් දුන්නම එස්සැම්නර්ගෙන් අහලා එමහම තමයි ආන්සර් කරන්නෙ. එතකොට ඉතිං ගොඩක් කල් යනවා.</p>
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Box 8-78: Charith-25Y-M-Matara

Shanil specifically mentioned that administrative matters were attended to and resolved by tutors very quickly, but not the matters relating to academic or course materials (Box 8-79). He also mentioned an instance where a tutor has not logged into the LMS for 2 weeks and another where their queries regarding an assignment were not answered until the deadline had passed.

<p>When we have a question we ask from tutors. They always say they will inform their superiors and answer us. Sometimes when we ask a question relating to an assignment, we don't get a reply until the assignment deadline is closed and another week or so has gone by. Last time when we posted questions, the subject tutor has not logged in to Moodle for 2 weeks. [...] When we ask something that we don't know and if they are not explaining it to us, there is no meaning in continuing that degree and there is really no use of such tutors. If we go to the office [CDL office] they get the official work done by the minute but when we ask something relating to subject matter their hands are tied. They tell us most of the time that they can't do it until they get an order from above.</p>	<p>අපට ප්‍රශ්නයක් ආවම අපි ටියුටර්ස් ලට දානවා, එයාලා කියන්නෙ හැම වෙලේම එයාලාට ඉහළ ඉන්න කට්ටියට ඉන්ෆෝම් කරලා ආන්සර් එකක් දෙන්නම් කියලා. සමහර වෙලාවට අපි අසයින්නම් එකක මොනවා හරි ප්‍රශ්නයක් දැමීමට පස්සෙ අසයින්නම් ඉවරවෙලා, ඩෙඩ්ලයින් ක්ලෝස් වෙලා සතියක් විතර යනකල් රිප්ලයි එකක් නෑ. ගියසැරේ අපිට ප්‍රශ්න තිබ්ලා අපි දැමීමා. ඒ සබ්ජෙක්ට් එකට අදාල ටියුටර් සති 02ක් ලොස් වෙලා නෑ Moodle එකට. [...] අපි දන්නැති දෙයක් ඇහුවම එයාලා කියලා දෙන්නෙ නැතිනම් ඒ ඩිපර්ට්මේන්ට් අපිට තේරුම්කුත් නෑ. ඒ ටියුටර්ස්ලගෙන් තේරුම්කුත් නෑ ඇත්තම. අපි ඔබ්ස් එකට ගියොත් ඔබ්සියල් වැඩ ඔක්කොම එයාලා කරලා දෙනවා. ඒවා නම් ගිය පමාවට කරලා දෙනවා. නමුත් සබ්ජෙක්ට්ස් වලට අදාල දෙයක් ඇහුවොත් එයාලගෙ අත් බැඳලා තියෙන්නෙ. එයාලට කරන්න බෑ. එයාලා ගොඩක් වෙලාවට කියනවා අපට මේක කරන්න බෑ ඉහළින් ඔබ්සියක් ඕන කියලා.</p>
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Box 8-79: Shanil-29Y-M-Badulla

Although most people prefer immediate feedback, many students tolerate some delay (Moore and Kearsley 2005). However having to wait two weeks for a response is unacceptable given that the communication is facilitated electronically. But interviews with tutors revealed that they were trying to answer queries “as soon as possible” and even if it was forwarded to the examiner there would only be a delay of one to two days (Box 8-80).

<p>If we ourselves can handle it is sent immediately or we reply as soon as possible. During office hours we are always online. If the question is something that requires coordinator's attention it will take one to two hours for us to reply. If coordinator can't handle it then it has to go to the course writer. When it is required to get examiner involved it takes one to two days.</p>	<p>ASAP තමයි.අපිට හැන්ඩල් කරන්න පුළුවන් එකක් නම් එවෙලෙම යවනවා.ඕරිස් අවර්ස් වල අපි දිගටම ඕන්ලයින් ඉන්නෙ.එතකොට කෝඩිනේටර් ගෙන් අහලා යවන එකක් නම් අපට පැයක් දෙකක් වගේ ඇතුළත පුළුවන්.කෝඩිනේටර් ටත් බැරි අවස්ථාවක කෝස් රයිටර් ළගට යන්න ඕන.එක්සැමිනර්ට යන්න ඕන වෙන අවස්ථා තියනවා.එතකොට දවස් එකක් දෙකක් වගේ යනවා.</p>
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Box 8-80: Madhavi-Tutor

The CDL was also contacted to obtain a better understanding of why such long delays existed in replying to questions (Box 8-81).

<p>[W]ell even I have to intervene if there is a delay or something. It [resolving issue] sometimes happens over the phone I think. But we have because people use email I think it can be from one day or within a day to even a two days. Sometimes we get this thing that tutors are waiting for something. No response or something but that is not a very common thing. Then somebody else will get to know about this. Then the tutor might ... may be contact [sic] the CDL and say that OK I am waiting for this. And then we try to contact the relevant module coordinator to know what is happening and why. So it is somehow we get to know.</p>
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Box 8-81: A Highly Placed Official at the CDL

Even though the CDL and the tutors admitted that they were trying to reply quickly, escalation and descent through the hierarchy did seem to take a long time. A mention of the historical reason for the decision to only allow contact for the DE students with lectures through the tutors would help understand the actual scenario behind the use of the tutors hired by the CDL. When the University was about to offer this IT degree in distance mode, students studying for a similar degree on campus resisted the initiative stating that the fee-charging course would receive priority from their lecturers. Thus the University wanted to avoid any clashes between student groups by not utilizing lecturers' services directly in delivering the DE programme (Box 8-82). Thus, tutors were employed by the CDL to interact directly with external students and act as a buffer between students and lecturers. However, the poor communication between these layers has adversely affected the external students.

[T]he material and the content was developed with the senior person as a course chairperson [...] Generally, these people are fairly busy. They have normal working hours as they are from universities and they have their own schedule of work [teaching internal students]. So teaching online or directly [associating themselves with the DE programme] was something that we thought would not be possible. [...] [T]he university also had some initial some kind of a resistance within the university also from internal students. So the university wanted to be careful about how whether using permanent academic staff. Normally they are meant to be teaching undergraduate [internal] programmes. Then all the other things even postgraduate things are [...] self funded money and the work the lecturers do is considered on top of the normal work. So for this one [the DE programme] university wanted to somehow to separate it out.

Box 8-82: A Highly Placed Official at the CDL

8.5.1.6 Technical Difficulties

• Issues Using Moodle™

Students accepted that Moodle™ was a good LMS but they have experienced some technical difficulties with it. For example, there was a gap of about 15minutes between the LMS server's time and the clock time. Since the links Moodle™ provided to upload assignments could be configured to become unavailable at a given time, students working on a different time on their clocks have had great difficulty in submitting assignments on time. Nirodha described this problem:

<p>We certainly had technical difficulties. [...] We work and upload our work at the last minute. A problem that we had in such situations was that there was a time difference in the Moodle server. It was about 15 minutes. [...] We only look at our watch and the clock on our computer screen. Then we don't remember the 15 minute difference nor do we feel the difference. As for me, 2 of my assignments and a discussion had timed out. The thing is, the link that they provide to upload the assignment disappears exactly on time. There after there is no facility to upload our assignments.</p>	<p>ඇත්තටම තාක්ෂණික ප්‍රශ්න ඇතිවුනා.[...] අන්තිම මොහොතෙ අපි අන්තිම ඩෙඩ්ලයින් එක කිව්වු වෙලා තමයි අපි හැමදෙයක්ම අප්ලෝඩ් කරන්නෙ. [...] ඒවගේ අවස්ථාවක අපට තිබුණ ගැටළුවක් තමයි මුඛ්ලේ සර්වර් එකේ ටයිම් ඩිෆරන්ස් එකක් තිබුනා.ඒ කියන්නෙ ඒනාඩි 15ක වගේ වෙනසක් තිබුණා මුඛ්ලේ සර්වර් එකේ.[...] අපි බලන්නෙ අපේ වෙබ් එකේ ටයිම් එකයි, කම්පියුටර් ටයිම් එකයි.එතකොට මුඛ්ලේ සර්වර් එකේ වනාඩි 15 ක ටයිම් ඩිෆරන්ස් එක අපට තේරෙන්නෙ නැ.මතක් වෙන්නෙ නැ.එතකොට මගේ පෞද්ගලිකව අසයින්නවිස් 2කුයි,ඒස්කෑන් එකකුයි ටයිම් අපූරි වෙලා තිබ්බා.වෙලා තිබ්බෙ හරියට ටයිම් එකට ඒ ලීන්ක් එක අතුරුදහන් වෙනවා, එතනින් එහාට ගැසිලිවී එක දෙන්නෙ නැහැ අප්ලෝඩ් කරන්න.</p>
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Box 8-83: Nirodha-24Y-M-Colombo

Another such issue was uploaded files going missing or being corrupted. Shanil, a hard working student, had failed one subject because his uploaded assignment was corrupted and due to this he is unable to graduate with his cohort. In his own words:

S: It has happened to us. Once it happened to me as well. The file I uploaded had somehow got corrupted. So I got zero marks for the assignment and was not eligible to sit the exam.	ශ: අපිට එහෙම වෙලා තියනවා. එක සැරයක් මටම වුණා. අප්ලෝඩ් කරපු එකක ෆයිල් එක කරප්පි වෙලා. ඉතිං අසයින්නේ එකට මාක්ස් සිරො. ඒක නිසා එස්සෑම් එකට එලිප්බල් නෑවුණා.
R: Then?	ක: ඊට පස්සෙ?
S: Then I got repeated for a year and my degree takes one more year.	ශ: ඊට පස්සෙ එස්සෑම් එක රිපිට් වුණා අවුරුද්දකට. එතකොට ඩිග්රි එක කල් යනවා අවුරුද්දකට.
R: So what did you do about it?	ක: එතකොට ඔයා ඒ ගැන මොකද කළේ?
S: I made a request. But the reply I got was “when you upload a file you have to download it and check again whether it is working or not”, that was all. Don’t know how the [MS]Word document got corrupted. The other thing is that they had waited till the last moment and it is only after publishing the eligibility list that they said that it had been corrupted. If they had said that before, at least one day before the closing date, I could have resubmitted.	ශ: රික්වෙස්ට් එකක් දැමීම. අපිට රිප්ලයි එක ආවෙ ඔයාලා අප්ලෝඩ් කරාම වෙක් කරලා බලන්න ඕන ආපහු ඩවුන්ලෝඩ් කරලා ඒක වර්කිංද නෑද්ද කියලා. වර්ඩ් ඩොකියුමන්ට් එකක් කොහොම කරප්පි වුණාද දන්නෙ නෑ. අනිත් එක එයාලා අන්තිම මොහොතෙ ඒ කියන්නෙ එලිප්බල් ලිපිට් එක දාලා ඉවරවෙලා තමයි කියලා තිබුණෙ ඒක කරප්පි කියලා. කලින් කියලා එවලා තිබ්බා නම් ක්ලෝසිං ඩේට් දවසක්වත් කියලා කිව්ව නම් අපිට දාන්නවත් තිබුණ.

Box 8-84: Shanil-29Y-M-Badulla

Slow response of the LMS was another common problem that was experienced by students. This could also be due to the slowness of the Internet connections that students use; otherwise there were not many issues with the use of Moodle™. Few other problems experienced were:

Once during Sinhala New Year holidays [Mid April] Moodle server failed. We had to wait till the Sinhala New Year was over. Things like that happen sometimes	එක සිංහල අවුරුදු වෙලාවක මුඩල් සර්වර් එක ෆේල් වුණා. අවුරුදු නිවාඩුව ඉවරවෙලා එතකල් අපට ඉන්න වුණා. එහෙම දේවල් ඉතිං වෙනවා සිටිපු ගමන්.
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Box 8-85: Nishara-41Y-M-Kalutara

There are times when the server is down, Moodle is down. Sometimes Moodle tends to be slow. That type of things are there	සමහරක් වෙලාවට සර්වර් ඩවුන්, මුඩල් එක ඩවුන් වෙනවා. මුඩල් එක ස්ලෝ වෙනවා. ඒ වගේ ඒවා තියනවා.
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Box 8-86: Chandrasiri-32Y-M-Colombo

Once there was a problem with networking. Then we were given an IP address to use [to access the system]. Then it was okay	එක සැරයක නෙට්වර්කිං අපුලක් ගියා. ඊට පස්සෙ අපට අයි පී ඇඩ්රස් එකක් දුන්නා යුස් කරන්න කියලා. ඊට පස්සෙ සේරම හරි
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Box 8-87: Arjuna-23Y-M-Colombo

Not much difficulty. But sometimes it is difficult to access the Moodle. There was a time that it could not be accessed at all. Then it was rectified. After that I think there were no such big issues.

අපහසුතාවයක් නම් ඇති වූයේ නැත. සමහර වෙලාවට මුඩල් එක ඇක්සස් කරන්න අමාරුයි. කාලයක් තිබුණා ඒක ඇක්සස් කරන්න බැරි. ඒක හැඳුනා ඊට පස්සෙ මං හිතන්නෙ එහෙම ලොකු කරදර ආවෙ නෑ.

Box 8-88: Himali-28Y-F-Galle

One reason for not reporting many technical difficulties with the LMS could be due to the high level of computer-related knowledge and the awareness of common ways of troubleshooting possessed by these IT degree students.

8.5.1.7 Infrastructural Issues

• Electricity Supply

Power failures and a sudden drop in voltages are common problems in Sri Lanka. Also, for maintenance work the electricity supplier may switch off the power grid; the most common period being an 8 hour maintenance period from 9.30 am to 5.30 pm. Many households with computers do not invest in Uninterrupted Power Supply (UPS) devices (Box 8-89) and this causes these computers to be more vulnerable to major difficulties caused by power disruptions.

If there is a power failure we don't have a UPS at home.

පවර් සේලියර් එකක් වුනොත්, ගෙදර යුපීඑස් එකක් නැතැනේ.

Box 8-89: Nishara-41Y-M-Kalutara

The availability of battery-powered computer devices, mainly laptops, is rare in Sri Lanka. (As stated earlier, 10.6% households in Sri Lanka owned desktop computers while the desktop or laptop ownership was 11.4%). Therefore the poor quality of power supply is of great concern.

• Non availability of ADSL Facility

ADSL connections are considered better than many other mobile broadband services, which are also more expensive. However, as discussed earlier, the Sri Lanka Telecom is only able to provide the ADSL facility to a very limited area around town centres. Therefore even though one wishes to obtain an ADSL connection, the infrastructure may not support it. Furthermore, there are some rural areas where none of the providers offer any service. Nishara is working for the leading IT and telecommunication infrastructure and service provider and expressed the view:

It may be that the IT infrastructure we currently have in our country has issues or that the people who take care of those do not have sufficient IT exposure. I have seen both these instances. [...] Because of my work [working for the leading IT and telecommunication infrastructure provider in the country] I get involved in providing IT infrastructure. There sometimes I have seen that the IT exposure of the people involved is not sufficient. It sometimes creates problems.

දැනට අපේ රටේ තියන අයි.ටී.ඉන්ෆ්‍රාස්ට්‍රක්චර් එකේ ප්‍රශ්න වෙන්න පුළුවන්. නැත්නම් ඒවා කරන කම්මියගේ තියන අයි.ටී.එක්ස්පෝෂයර් එකේ ප්‍රශ්න වෙන්න පුළුවන්. මම මිය දෙකම දැකලා තියනවා. [...] මොකද මම වැඩකරන තැනේ හැටියට මම සමහර වෙලාවට සම්බන්ධ වෙනවා අයි.සී.ටී.ඉන්ෆ්‍රාස්ට්‍රක්චර් එක දෙන්න. ඒ තැන් වලදී මම සමහර වෙලාවට දැකලා තියනවා ඒ අයගේ එක්ස්පෝෂයර් එක මිදි. ඒක ප්‍රශ්නයක් වෙච්ච වෙලාවල් තියනවා.

Box 8-90: Nishara-41Y-M-Kalutara

8.5.1.8 Computer Skills

Students who completed questionnaires as well as students who participated in interviews claimed to have a high level of computer skills. But tutors of the programme indicated that they had seen students with poor computer skills (Box 8-58).

8.5.1.9 Awareness of Online Course

It was revealed from the interviews that some students who registered for this online programme had done so assuming an online programme to be “easier to complete” than an in-person course. Nirodha expressed how he thought it would be an easier path for a degree (Box 8-91). As discussed already, the number of students continuing the programme at the end of the 3 years is very low, only 36 students out of the 98 initial registrations. One reason for such high drop-out rate could also be due to students’ initial perception that an online degree would be an “easy thing” to do but later realizing that this was not the case.

When we heard an “Online Degree” is offered we didn’t know those days [what it meant]. We thought it would be an easy thing to do. But later on we realized that it was not so easy. We had to make many sacrifices for this.

ඔන්ලයින් ඩිග්‍රියක් කරනවා කිව්වම අප් ඉස්සර දැනගෙන තිටියේ නෑ. අපි හිතුවා මේක ලේසි දෙයක් කියලා. පස්සෙ තේරුණා හිතුවරම් ලේසි නෑ. අපට සැහෙන්න කැප කිරීම් කරන්න වුණා.

Box 8-91: Nirodha-24Y-M-Colombo

Also students who registered were not familiar with the concept of online learning. Recall Arjuna explaining how they requested/demanded in-person classes at the beginning of the course (Box 8-50).

8.5.1.10 Issues of Recognition

Some students expressed their concern about a recent change in the UGC policy to distinguish between internal and external degrees. They felt that a degree certificate containing the word “external” would have drastically reduced prestige (Box 8-92).

When we started this course, we were told that it would not be indicated on the Degree certificate that this was an external degree. Even in the BIT Degree Certificate of University of Colombo they do not include within brackets that the Degree is an external one. Many people do not have a good impression about an external degree.	මුලදී මේ කෝස් එක පවත්වන්න කොට කිව්වේ දැන් ඇත්තටම ඩිග්ට් සර්ටිෆිකට් එකේ දාන්නේ නැහැ කිව්වා මේක එක්ස්ටර්නල් ඩිග්ට් එකක් කියලා.[...] කොළඹ යුනිවර්සිටි එකේවත් දාන්නේ නැහැ ඩිග්ට් සර්ටිෆිකට් එකේ වරහන් ඇතුළේ බැවලර් ඔෆ් ඉන්ෆොර්මේෂන් ටෙක්නොලොජි එක්ස්ටර්නල් කියලා[...]එක්ස්ටර්නල් කියලා දැක්ක හමන් සමහර බලන්නේ අමුතු කෝණයකින්.
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Box 8-92: Nirodha-24Y-M-Colombo

8.5.2 Summary

In implementing the online distance education programme to increase opportunities for higher education, OVU has overcome many barriers. Students of the online programme faced many difficulties such as Internet and library resource access; issues with the use of NACs; high course fee; erroneous and substandard study materials and poor communication. Technical difficulties such as server failure, time differences, and corruption of uploaded files were also reported. Power supply and the availability of ADSL services were some of the infrastructural issues. The awareness of online course delivery, the lack of computer skills (in very few cases) and concerns of recognition for the degree were issues that required attention.

9 Data Presentation, Analysis and Discussion – Case 2 – Yellow Fields University

9.1 Introduction

This chapter presents the second case study of implementing distance education (DE) utilizing ICTs. The case of Yellow Fields University (YFU) is discussed in this chapter.

Similar to the previous case study presentation, research questions are posed and answered systematically.

9.2 Background

1. How have ICTs been introduced to undergraduate DE programmes in contemporary Sri Lanka?
 - b. How have these been implemented by the state universities providing DE undergraduate degree programmes?

From the early days YFU has been a DE provider and it caters for a variety of learners with a range of courses offered from certificate level to higher degree programmes. The Distance Education Modernization Project (DEMP) has substantially increased the levels of resources of YFU and financed the upgrading of some print-based courses to electronic media and the implementation of a Management Information System.

Students registering for a course with YFU are automatically registered with the National Online Distance Education Service (NODES) and this allows them access to NACs around the country. YFU pays a fee of Rs.500 (about £2.70) per student for the NODES facilities. This fee is included in the University's registration fee. Unlike the case of OVU, this fee is a one-off payment. Thus YFU students enjoy the same facilities provided by the NODES at a much lower cost than the students at OVU. In fact, for a three-year course when OVU students pay Rs.45,000 (about £250), YFU students pay only Rs.500. (It must be noted that most YFU programmes are blended programmes unlike the OVU's DE programme, thus only requiring limited resources from NODES servers.)

9.2.1 Course Development and Delivery

Having been an Open and Distance Learning (ODL) provider for many years YFU has well-defined procedures for course development. In the late 1990s, a grant for implementing an improved institution-wide process to design and deploy instructional material helped YFU to implement institution-wide practice in material design and development. YFU courses are developed in stages and a course team is responsible for the course development. The first stage of course development is the demand analysis; after that a course team is formed. This course team comprises people with different expertise: academic expert, educational technology expert, audio visual and graphic experts, language editor, and subject editor are some of the people included in a team. People who are responsible for the course delivery are also part of the course team. This entire team is responsible for the design and development of the course. When a course is developed, it needs to pass the development testing in order to continue to the next phase. Development testing is where a sample of lessons of the lessons developed is given to a prospective learner or learners to get their feedback. The development of a course book at YFU takes 1-2 years. In general, YFU programmes utilize face-to-face sessions (“day-schools”) to discuss course materials with students. Unlike the case of OVU where students can only communicate with tutors, students at YFU are able to meet their lecturers either face-to-face or online to clarify issues about course materials. YFU does not employ a separate group of tutors, thus it is the same panel of lecturers who conduct tutorials.

Online learning is not new to YFU as it has been in use there since 2003, albeit on a different platform (“Manhattan”). A workshop on multimedia and eLearning by the Commonwealth of Learning, organized by the Commonwealth Educational Media Centre for Asia (CEMCA) was the stimulus for this effort (Commonwealth of Learning 2007). The attempt was largely voluntary. This initial effort to introduce online learning provided communication and resources sharing but not online delivery (Ranasinghe and Gamini 2010). In 2005, the current MoodleTM online learning platform was first introduced to YFU (Jayatilleke 2010). With assistance from the DEMP, YFU’s online courses were formalized and mechanisms for designing, delivering, and monitoring were introduced in 2008.

Courses utilizing ICTs for delivery at YFU are of three types:

- Supplementary online (no compulsory online component)
- Blended online (around 20% compulsory online assessment)
- Online plus (more than 20% compulsory online assessment)

Very few courses (only 3 by 2010) at YFU were online plus courses (Ranasinghe and Gamini 2010); the majority of courses use ICTs to supplement traditional delivery methods with some courses using a blended approach. A blended course consists of about 20% online activities as opposed to a supplementary course that uses less than 5% (non compulsory) online activities. This formula for online activities in supplementary courses allows students who are unable to access the online component of a course still to be able to continue the programme. There were 59 courses on the LMS on 31st December 2009 (Jayatilleke 2010). With DEMP assistance, three different templates were developed and tested for the three types of course mentioned above. A separate unit dedicated to educational technology is responsible for creating templates, reviewing developed courses, uploading courses to the NODES and supporting students with technical matters related to the LMS.

Students registered with YFU programmes having a MoodleTM presence (not all programmes at the YFU has a corresponding MoodleTM course) are able to view weekly lesson plans through the LMS and to access any resources uploaded. Digital submissions of assignments are supported in online plus and blended courses. At YFU online discussion forums and chat sessions are highly encouraged; in fact, one faculty (with 43 courses on MoodleTM at the time of writing) has introduced a “virtual office hour” where the course lecturer is guaranteed to be online for clarification through chat. However, lecturers have complained that even with all these initiatives students are reluctant to participate in online activities (Tantrigoda 2010).

All students entering YFU are required to take an English language course; exemptions are granted for students who have achieved a pass in the A/L General English paper. An important feature of YFU programmes is the allowance to study either in a local language or English up to the 2nd year (or level 4) of a degree level programme. Levels 1 and 2 (foundation programme) are intended for students who have not qualified at the A/L examination. The foundation programme and the first year of a degree programme (Level 3) are conducted in all three language media (Sinhala, Tamil and English) to allow students

who are used to the conventional system of study and have studied the school curriculum in local languages, to have a smooth transition to English medium DE. From level 4 onward all students study in the English medium. This contrasts with how programmes are conducted at OVU, because degree courses there are conducted only in the English medium from the beginning (equivalent to YFU's Level 3).

9.2.2 Summary

With assistance from the DEMP, YFU received substantial funding for upgrading its facilities. Course development and delivery at YFU are formalized and there are strict procedures in place for quality assurance. Online learning is used at 3 different levels: supplementary online, blended online and online plus. Programmes at YFU are conducted in local languages and English up to level 4 (second year in a degree), and thereafter it is conducted only through English.

9.3 Student Perspective

This section explores YFU students' perspective of ICT-enabled DE programmes.

2. How are these initiatives [initiatives to introduce ICTs] perceived by the students of DE undergraduate degree programmes?
 - c. What ideas and beliefs do students have about the introduction of ICTs to undergraduate DE degree programmes?

YFU respondents were from four different degree programmes: science, ICT, engineering and technology (degree programme names are withheld for anonymity). The number of respondents from each programme is presented in Table 9-1.

Table 9-1: Respondents (programme-wise)

	Questionnaire	Interviews
Not Stated	7	
Science	31	2
ICT	5	4
Technology	35	
Engineering	18	4
Total	96	10

9.3.1 Why Introduce ICTs

Many students at YFU were excited about the online learning experience while some had yet to try it out. But there were others who did not welcome such changes. Figure 9-1 summarizes YFU respondents' views on why ICTs were introduced by universities.

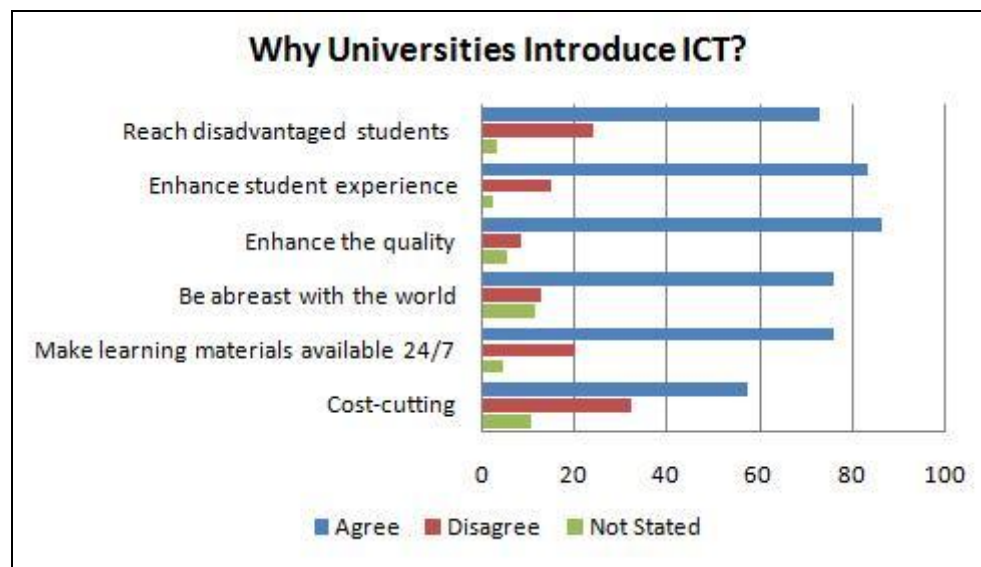


Figure 9-1: Why Universities Introduce ICTs

The majority of questionnaire respondents (86%) believed that the introduction of ICTs would enhance quality and the student experience. 76% believed that ICTs would allow disadvantaged students to be reached but strong disagreement was also observed from some. For example, one respondent, even after marking “very strongly disagree” as his response to the question, used the comments section provided in the questionnaire to voice his further disagreement. [Note: Question 2:2f in the questionnaire was to rate the statement “to reach disadvantaged students (for example, students in rural areas and disabled who find it difficult to attend classes)” as a reason for introducing ICTs for university educational delivery.]:

Section 2:2f I disagree because rural areas do not have internet facility at all.

Box 9-1: A 24 year-old male student from Wattala

In fact, Bandula, an interview participant from a remote village in Hambantota, also mentioned that other than the increase in mobile phone usage there was hardly any improvement in his area with respect to ICTs (Box 9-2). As of 2010, Bandula’s village was not serviced by any of the Internet service providers. Furthermore he raised issues such as

the ability to afford technology, availability of equipment and knowledge of how to use technology that are discussed later in the chapter.

When considering the village where I live, there isn't such advancement [of the ICT use] as they say. In general there is an increase of mobile phone usage; other than that there is no such development in any other aspect that could be used for educational delivery. But as a whole, the situation has greatly improved when compared to what it was 2-3 years back. According to my understanding, if you consider Sri Lanka as a whole, it is not everyone who can afford it. One is the dependency on income. Though it is not such a big amount people can't afford even that. The other thing is the low knowledge about technical equipment and the low spread of such equipment.	දැන් අපේ ගෙවල් පැත්ත ගම් පැත්ත වගේ ගත්තහම ඔය කියන තරම් දියුණුවක් නැහැ. සාමාන්‍යයෙන් පංගම දුරකථන භාවිතයේ දියුණුවක් තිබුණත් වෙනත් ක්ෂේත්‍ර ගත්තහම අධ්‍යාපනයට යොදා ගන්න පුළුවන් තරම් දියුණුවක් නැහැ. ඒත් සමස්තයක් වශයෙන් ගත්තහම, මීට අවුරුදු 2 ක් 3ක් පස්සට ගියහම ඒකත් එක්ක සසඳන්දි ගොඩක් දියුණුවක් තියනවා මේ වෙද්දි. ඒ වුණොට දැන් සාමාන්‍යයෙන් ලංකාවම ගත්තහම මට තේරෙන විදියට හැමෝටම ඒක ලබා ගන්න පුළුවන් මිලටමක් නැහැ. එකක් මුදල් මත යැපීම. මුදල එව්වර වශල නොවුනත් ඒකත් මිනිස්සුන්ට දරාගන්න බැරි මිලටමක් තියෙනවා. අනිත් එක අවශ්‍ය කරන තාක්ෂණික මෙවලම් ඒවා මේවා ගැන දැනීම අඩුවීමයි, ඒවායේ ව්‍යාප්තිය අඩුවීමයි.
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Box 9-2: Bandula-29Y-M-Hambantota

Three quarters of respondents agreed that ICTs would allow making learning materials available 24/7; only 57% agreed that ICT was a cost-cutting mechanism. There were strong supporters, strong opponents and assertive interview participants with respect to ICT as a cost-cutting mechanism. For example, Kamani was a strong supporter who remarked that:

There are benefits for both students and for the university [...] Notes can easily be emailed. So even if there are a large number of students, mailing charges will be very low. The cost for printing materials could also be reduced. [...] They can have online classes. Through that, the cost for arranging classes - for example, the cost for venue can be reduced. [...] We don't always have to travel back and forth from the university and transport cost is therefore minimal. We don't have to call and ask for information, as we can email: and through email any number of people can ask [questions] and obtain anything anytime in detail. Otherwise if we try to contact them [by phone] the cost will be high. We don't have to take printouts of materials because they are available online. And we don't have to purchase e-books either.	ස්ටුඩන්ට්ස්ලටත් තියෙනවා බෙනෙෆිට් එකක්, යුනිවර්සිටි එකටත් තියෙනවා. [...] නෝට්ස් එකක් ඊමේල් කරන එක විතරයි තියෙන්නෙ. ගොඩක්ම ලේසියි ස්ටුඩන්ට්ස් ලා ලොකු ගණනක් හිටියත් ප්‍රශ්නයක් නෑ මේලිං කොස්ට් එක අඩු කර ගන්න පුළුවන්. ඒ වගේම ප්‍රින්ටින් මැටීරියල්ස් වලට යන කොස්ට් එකත් අඩු කරගන්න පුළුවන්. [...] ඒ වගේම ඕන්ලයින් ක්ලාස්ස් තියන්න පුළුවන්. ඒකෙන් ඒ ගොල්ලන්ට ක්ලාස්ස් ඇරෙන්නේ කරන්න යන ගොඩක් අපි කියමු ක්ලාස් එකේ ලොකේෂන් එකට ඒ වගේ යන කොස්ට් එක අඩු කරගන්න පුළුවන්. [...] අපට යුනිවර්සිටි එකට යන්න එන්න ඕන වෙන්නෙ නැහැ හැම තිස්සෙම. ට්‍රාන්ස්පෝට් කොස්ට් එක අඩුයි ගොඩක්ම. එතකොට අපිට කෝල් කරලා අහගන්න ඕනෙන් නෑ ත්රෑ මේල් ඕන තරම් කවරියකට අහගන්න පුළුවන්, අවශ්‍යම දෙයක් ඕනම වෙලාවක. ඉන් ඩිවේල් ගන්න පුළුවන්. නැත්නම් කන්ටැක්ට් කරන්න ගියොත් කොස්ට් එක වැඩිනෙ. තව අපට ප්‍රින්ට් අවුට්ස් ගන්න ඕන නෑ අපට ඕන්ලයින් අවේලබල් නෙ හැම මැටීරියල් එකක්ම. එතකොට ඊ බුක්ස් වගේ අපට පරිවෘත්ත කරන්න ඕන වෙන්නෙන් නැහැනෙ.
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Box 9-3: Kamani-28Y-F-Gampaha

On the other hand, Manu and Pulathisi, both full-time students at the University, were strong opponents who argued that the introduction of ICTs would increase costs to students. Manu is originally from Badulla (a distant town) now a boarder in Colombo to follow a YFU

degree. Pulathisi is from the Western Province, but neither of them owned a computer. This statement about the difficulties in acquiring physical connectivity to the Internet seems to reflect their own experiences (Box 9-4).

<p>M: I don't know about the possibility of using ICT to reduce costs, nevertheless it makes it possible to extend educational opportunities to a larger number. One can deliver a course online from here so that some others in a different locality will be able to do their learning from there. No need to build a place especially for that. [...]</p> <p>P: One has to incur a certain cost to go online. Suppose the student does not own a computer. Then that student needs to buy a computer and then an Internet connection. All those cost money, and in addition, the student has to bear a monthly charge too, as nothing comes free. [...] May be ICT will reduce costs to the management. I mean even if the cost is reduced from the management's perspective, for the students, the cost could be more.</p> <p>M: Yes, very true. I think this is only suitable for capitalist countries [meaning developed countries]. In a middle class country like ours [meaning a developing country] those things [ICTs] are used only in the urban areas. In villages you won't find computers; in fact, people are struggling to live their day today lives, and for them, going online is just a dream, don't you think? Absolutely a dream. To buy a computer, to buy an Internet connection, to get it activated- all these prove to be quite a hassle. It is good for the wealthy; it may be highly successful with them I suppose.</p>	<p>ම: ICT යොදා ගෙන වියදම් අඩු කරන වැඩේ කොහොම වුණත් ගොඩනංව අධ්‍යාපනය ලබාදෙන්න හැකියාවක් තියෙනවා. දැන් මෙතන ඉඳලා ඔන්ලයින් ඕන නම් තව කොහෙ හරි පිරිසකට තමන් ඉන්න තැන ඉඳලා තමන්ගෙ අධ්‍යාපන කටයුතු කරන්න පුළුවන්. පිරිසකට වෙනම තැනක් හදන්න අවශ්‍යතාවයක් නෑ. [...]</p> <p>පු: වියදම් කරන්න ඕනනෙ ඔන්ලයින් ගන්නකොට. ඔන්ලයින් ගන්න හියහම කම්පියුටර් තැහැයි කියලා තිබ්බකෝ. ඒ ළමයා කම්පියුටර් එකක් ගන්න ඕන, නෙට් කනෙක්ෂන් ගන්න ඕන එකකොට වියදම් වෙනවා. ඒ ළමයට ඒවාට මාසිකව ගෙවන්න වෙනවා නිකං නෙමෙයිනෙ. [...] සමහර විට ICT දැම්මහම වියදම් අඩු වෙන්න පුළුවන් පරිපාලනය පැත්තෙන්. ඒ කියන්නෙ පරිපාලනයට වියදම් අඩුවුණත් ශිෂ්‍යයෙක් පැත්තෙන් වියදම් වැඩිවෙන්න පුළුවන්.</p> <p>ම: ඒකත් එහෙමයි. දැන් එකම දේ තමයි මට නම් හිතෙන්නෙ ඕක ඇත්තටම ලෝකෙ ධනවාදී රටවල් වලට ඔය ක්‍රමය හොඳයි. සුචි වෙනවා. මධ්‍යම පන්තික අපේ වගේ රටවල් වලට ඉතිං ඔය වගේ යුස් වෙන්නෙ නාගරික කියන සීමාවේ විතරයිනෙ. ගම් වලට යද්දි කම්පියුටර් එකක් තියා මේ ජීවත් වෙන්න වත් අමාරු තත්ත්වයක ඉන්න මින්ස්සුන්ට ඔන්ලයින් කියන එක හිතයක් ඇත්තටම නේ? හිතයක්ම තමයි. කම්පියුටර් එකක් ගන්න, කනෙක්ෂන් එකක් ගන්න, ඒක යාවත්කාලීන කරගන්න වගේ ලොකු හැල හැප්පිම් ගොඩක් තියනවා භාවිතා කරනකොට. ඒක හොඳයි ඇත්තටම මේ වෙන හොඳ සුපිරි පැලැන්තියට වගේ. මේ ක්‍රමය අති සාර්ථක වේව් මම හිතන විදියට.</p>
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Box 9-4: Manu and Pulathisi-23Y-M

Roshan, a software engineer had a different view:

<p>I mean there are two ways. If you are spending to teach in a classroom you have to spend for the chairs, to keep the room in order. If you want to teach online you have to maintain some kind of a server to hold all the information, pay for the technicians, I don't know what else. I mean the difference between the values. In one way it is a cost cutting, another way you are getting some other expenses.</p>

Box 9-5: Roshan-24Y-M-Colombo

His understanding of technicalities in IT systems seems to have shaped his view. In fact, Mason (1999) argues that in most cases technology becomes an added cost to the existing

system. Bandula observed that there was readiness to use ICTs even at village level (Box 9-6).

In some villages they would buy an old computer, even if only to listen to a song if not for anything else. Actually there is readiness in villages. Those people like to be a part of it all.	සමහර වෙලාවකදී සමහර ගම් වල ගෙවල් වල වෙන දෙයක් නැතත් අඩුම ගණනේ සිංදුවක් අහන්න හරි පරණ කම්පියුටර් එකක් හරි ගෙනියනවා. ඇත්තටම ගම් වල සුදානමක් තියෙනවා. ඒ මිනිස්සු කැමතියි ඒකට සහභාගී වෙන්න.
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Box 9-6: Bandula-29Y-M-Hambantota

However, Manu reiterated that many who would like to possess ICT resources were unable to afford them (Box 9-7).

Resource limitation is a huge problem. That is the problem that is there for people in Sri Lanka. Actually even a villager would, let me tell you. I don't have a computer. Wouldn't I like to keep a computer of my own and work on it? Anyone likes to do that - to go online. Even though we like it, it has turned to an economic problem. If we had resources, we would have definitely done it. Even if it wasn't here one would have gone elsewhere to do it. At least one would go to a [Internet]cafe to get the work done. It is not possible because of economic difficulties.	රිසෝසස් සීමිත වීමේ ප්‍රශ්නය තියනවා. ඒ ප්‍රශ්නෙ තමයි ලංකාවේ මිනිස්සුන්ට තියෙන්නේ. රිසෝසස් හරිම ලිමිටඩ්. ඇත්තටම දැන් ඔය ගමේ මනුස්සයෙක් ට්‍රිෂන් මං කියන්නකෝ. මට කම්පියුටර් එකක් නෑ. මං ගාව කම්පියුටර් එකක් තියාගෙන වැඩ කරන්න මම කැමති නැද්ද? කැමතියිනෙ? ඕනම එක්කෙනෙක් ඒ වැඩේට කැමතියි. අන්න ඒ දේ ඔන්ලයින් යන්න කැමතියි. කැමති ට්‍රිෂන් ඒක ආර්ථික ප්‍රශ්නයක් වෙලා. මෙහේ රිසෝසස් තිබ්බ නම් ඒක කරනවානෙ අනිවාර්යයෙන්ම. වෙන කෙරෙහේ හරි ගිහිල්ලා හරි කරනවා. දැන් අඩුම ගණනේ කැලේ එකකට හරි ගිහිල්ලා ඔය වැඩේ කරනවා. කරන්න බැරි ආර්ථික අපහසුතා නිසා.
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Box 9-7: Manu-23Y-M-Badulla

There was an unease felt by some interview participants about the introduction of ICTs for their programmes. For example, during one conversation a participant voiced his fear of the introduction of ICTs; he and his friends feared that the use of online facilities would hinder the poor, with which category they identified themselves, in accessing education (Box 9-8).

We fear that online and ICTs would render distance education inaccessible to us – people who are not very well to do - and take away our right for education. That is why we think that online methods and the use of ICT are not suitable for this context.	දැන් ඩිස්ටන්ස් ලර්නිං කියලා අර අපි වගේ නිර්ධන පන්තික මිනිස්සුන්ට ඇවිල්ලා අධ්‍යාපනය හදාරන්න දෙන අයිතිය ඇහිරෙයි කියන බය නිසා තමයි ඔය ඔන්ලයින් ක්‍රම, ICT භාවිතා කිරීම මෙහෙට සුචි වෙන්නේ නැති ගතියක් තියනවයි කියලා හිතන්නේ.
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Box 9-8: Manu-23Y-M-Badulla

The group interview revealed that it was not only this particular student who had this fear. His friends too shared these concerns (Box 9-9).

<p>D: [...] Not everybody can afford to have Internet access from home nor everyone can use the Internet. Then there will be a problem for people who are financially less stable. Children of ordinary families will face difficulty in pursuing a degree. At present if we consider [REDACTED], anyone can afford to enter because we can afford the fees that they charge.</p> <p>M: This online thing is already in the system, but not much, only about 10%. If this Online thing becomes more important in this setup it is going to create a negative impact on a student's economy, because it is difficult to afford the initial capital required for that in the Sri Lankan setup. An ordinary family would find it difficult to afford. The easiest option is the already existing system. [...] If per capita income could be increased to a level where everyone can afford it and then trying out this method would suit our society better. If this is brought in now, it is not going to succeed. And it is going to create a problem too; in fact, this is not going to be a small one: it will be one which we will never be able to solve.</p>	<p>දී: [...] හැමෝටම එකවගේ ආර්ථික පසුබිමක් නැහැ. හැමෝටම නෙට් ඇක්සස් කරන්න බෑ ගෙදරින්. ඉන්ටනෙට් යුස් කරන්න බෑ. එතකොට ඒ කියන්නෙ අර එතකොට ප්‍රශ්නයක් ඇති වෙනවා නිර්ධන පන්තියේ කම්පියට. සාමාන්‍ය දෙමව්පියන්ගේ දරුවන්ට ප්‍රශ්නයක් ඇතිවෙනවා එතකොට ඩිග්‍රීයක් ගන්න. දැන් [REDACTED] ගත්තොතින් ඒකට ඕනෑම කෙනෙකුට ඇතුළත් වෙන්න පුළුවන්, හැකියාවක් තියනවා. මොකද අපට ගෙවන මුදල අපට දරාගන්න පුළුවන්.</p> <p>ම: ඕන්ලයින් කියන කතන්දරේ මේකට ඇතුළු වුණොත් දැන් සාපේක්ෂව ගත්තොත් විශාල ප්‍රමාණයක් නෙමෙයි, 10% ක් විතර මිස කතන්දරේ තියනවා. මේක ඇතුළේ. ඔතනින් එහා යද්දි ළමයකුගේ ආර්ථිකයට බලපාන දෙයක් වෙනවා නම්..... ඕන්ලයින් කතන්දරේ ආවොත් වෙනවනෙ. මොකද ඒකට ඕන මූලික ප්‍රාග්ධනය සොයාගන්න එක ලංකාව කියන රටේ, ලංකාවෙ තියන පරිසර තත්ත්වය අනුව අමාරුයි. සාමාන්‍ය පවුලකට ඒ විදියට වියදම් කරලා ඒ දේ කරන්න අමාරුයි. ඊට වැඩිය පහසුම ක්‍රමය තමයි දැන් යන විදිය. [...] හැම පුද්ගලයාගෙම ඒක පුද්ගල ආදායම වැඩි කරලා ඒ වගේ තැනකට ගෙනැල්ලා මිස ක්‍රමය මේකට ඇතුළු කරනවා නම් ඒක සුඵ වෙනවා. දැන් ඕක මෙතෙන්නට ගේනවානම් හරියන්නෙ නෑයි කියන එක තමා ප්‍රශ්නය. ප්‍රශ්නයක් කියන්නෙ පොඩි පහේ එකක් නෙමෙයි ඒක විසඳගන්න බැරි ප්‍රශ්නයක් වෙනවා.</p>
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Box 9-9: Dinesh and Manu-23Y-M

They also tried to justify why introducing online education would not be beneficial. For example, one participant argued that a student following an online course would only have a “limited range of knowledge” because he is “not sharing his knowledge” (Box 9-10). Conversely, students in this group conversation identified online learning to be a medium for “knowledge sharing”, especially with students at foreign universities (Box 9-11). The conflict of ideas presented seemed to demonstrate the internal conflict and desperation to reject the use of ICTs for educational delivery at YFU.

Even though we study in distance mode at [redacted], we do come and discuss and share our knowledge. We learn by sharing our knowledge. If online courses are introduced, students will follow courses from home. He [she] will have very limited opportunity to share his [her] knowledge. That student will only know what he [she] has studied. Even though one can get knowledge from a book, something more can be gained from discussing with other students. If online method is introduced or distance learning is altered by introducing ICTs the amount of knowledge accumulated by a student will be a lot less. [...]

[...] එකේ අපි ඩිස්ටන්ස් ලේන්. කලාට අපි මෙනතට ඇවිල්ලා, ළමයි එක්ක සාකච්ඡා කරලා දැනුම් බෙදා ගන්නවා. දැනුම බෙදාගෙන තමයි ඉගෙනගන්නේ. ඔන්ලයින් කෝස් ආවොත්, ඔන්ලයින් කරන ශිෂ්‍යයෙක් ගෙදරට වෙලා ඉන්න ශිෂ්‍යයෙක්ට දැනුම බෙදා ගන්න තියන පරාසය අඩුයි. ඒ ශිෂ්‍යයා දන්නේ ඒ දේ විතරයි. පොතකින් යමක් ලබා ගත්තත් ඊට වැඩිය යමක් අපිට ගන්න පුළුවන් කවිටියත් එක්ක කරා කරලා. ඔන්ලයින් ආවොත් එහෙම ඩිස්ටන්ස් ලේන්. ක්‍රමය ICT දාලා වෙනස් කළොත් ළමයෙක් දැනුම ලබා ගන්න ප්‍රමාණය ගොඩක් අඩුයි. [...]

Box 9-10: Dinesh-23Y-M-Colombo

P: It is good to bring in Online [courses] because we can join in with foreign universities.
M: It will be possible to share knowledge

පු: ඔන්ලයින් ගේන එක හොඳයි මොකද පිටරට යුනිවර්සිටිස් එක්ක අපිට සොයින් වෙන්න පුළුවන්.
ම : නොලේස් සෙයාර් කරන්න පුළුවන්.

Box 9-11: Pulathisi and Manu-23Y-M

In another instance, the same participant declared that a student studying online would become selfish while his colleagues discussed how an online learner would lack social skills (Box 9-12).

D: There is another thing. If we consider a campus setting, one gets social exposure. That is very important for a human being. A person doing an online course would not get that experience.
M: A separate course would have to be introduced for that.
D: He/she will have to follow a separate course to get to know how to move in the society, how to deal with people and to learn all those things.[...]He/she has limited opportunity to move in the society. How is he/she going to handle people? That person would always think that he knows everything.
M: He/she will become selfish

දී: තව දෙයක් තියෙනවා. අපි කැම්පස් එකක් ගත්තොත් සමාජ ආශ්‍රය තියෙනවා. ඒක මනුෂ්‍යයෙකුට හුඟක් වැදගත්. ඔන්ලයින් කරන කෙනෙකුට එහෙම සමාජ ආශ්‍රයක් ලැබෙන්නෙ නෑ.
ම: ඒකට වෙනම කෝස් එකක් දාන්න වෙනවා.
දී: එයාට වෙනම කෝස් එකක් කරන්න වෙනවා. කොහොමද සමාජය ආශ්‍රය කරන්නේ, කොහොමද මිනිස්සු එක්ක ඩිල් කරන්නේ කියලා. ඒ හැම දෙයක්ම ඉගෙනගන්න. [...] එයා සමාජයත් එක්ක මුළු වෙත ප්‍රමාණය අඩුයි. එයා කොහොමද මිනිස්සු හැන්ඩල් කරන්නේ? එයා හැම තිස්සෙම හිතන්නේ එයා තමයි දන්නේ කියලා.
ම: එයා ආත්මාර්ථකාමියෙක් වෙනවා

Box 9-12: Dinesh and Manu-23Y-M

However, not everyone at YFU was opposed to the introduction of online learning. Daham welcomed the online facility because he thought that students who were too shy to ask questions in public would benefit from the use of online forums (Box 9-13).

Some students are shy to ask questions from lecturers. Therefore it is easier to get things clarified with this medium than in a 'day school'. This medium allows [to overcome] it. A lecture is done by a lecturer to match all students' levels. But [...] if we can follow the course materials and can communicate online with the lecturer to solve the questions that we get, it will be very worthwhile.	'බේ ස්කූල්' එකකදී කරුණු පැහැදිලි කරගන්නවාට වඩා අපිට දැන් සමහරක් අය ඉන්නවා හයි. ඒ කියන්නේ ලෙක්චරස්ල ගෙන් ප්‍රශ්නයක් අහන්න ඒ වගේ දේකට ලැජ්ජාවක් වගේ ඇතිවෙන්න පුළුවන්. එතකොට මේ වගේ මිඩියා එකක් පාවිච්චි කලහම [...] ඔක්කෝටම ගැලපෙන විදියට තමයි ලෙක්චරර් ඒක කරන්නේ, ලෙක්චර් එක කරන්නේ. නමුත් [...] කෝස් මැටීරියල්ස් ගොලෝ කරලා අපිට ඇතිවෙන ප්‍රශ්න විකරක් අපි ඔන්ලයින් අපිට ලෙක්චරර් එක්ක විසඳගන්න පුළුවන් නම් අපට ඒක ගොඩක් වටිනවා.
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Box 9-13: Daham-23Y-M-Matara

In fact, Daham's point of view was corroborated by one of the lecturers from YFU who shared her experience:

We started the online course first then we opened the study centre at Batticaloa afterwards. These people were quite happy and there was one particular person, he was always there, quite enjoying the online learning. [...] He is a very quiet person face-to-face but very active online. So I think that facility is there. People who are shy and you don't want to you know just speak in front of all the people but can be quite active online.
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Box 9-14: Dr Savitri-Lecturer

It is also supported by Engler (2000) who acknowledged the participation of shy students in asynchronous communications. The discussion so far has revealed that even though there was strong opposition to the introduction of ICTs for course delivery at YFU, the actual benefits of ICTs were also identified by some. The next section explores YFU students' views on ICT as a communication tool.

9.3.1.1 ICT as a Communication Tool

YFU has used ICT as a communication tool since the introduction of its earlier online platform in 2003, to communicate information to students (Jayatilleke 2010). As can be seen from Figure 9-2, the vast majority (97%) of respondents agreed that ICTs as a communication tool improved communication and interaction. Respondents who disagreed did not possess home Internet connections. It could be one reason for their disagreement because if one has the Internet facility at home, a variety of applications can be used for communication including emails, voice over IP communication (e.g. Skype™) as well as social networking sites.

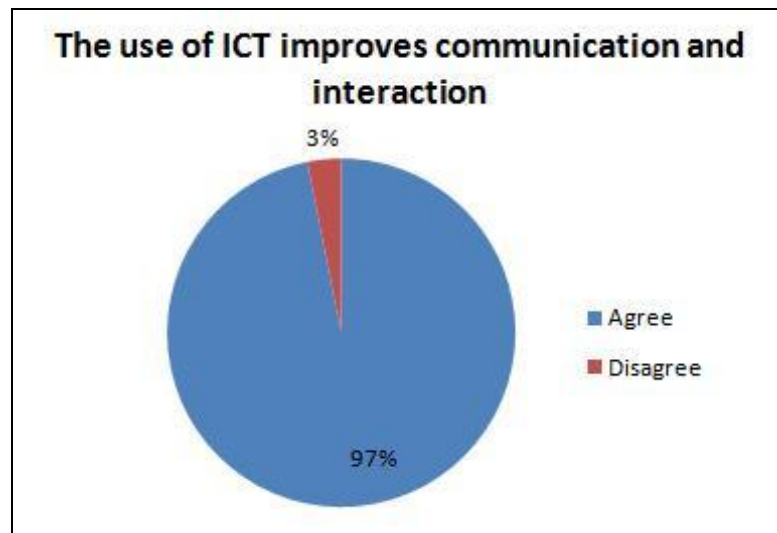


Figure 9-2: ICT as a Communication Tool

As seen in Figure 9-3, 86% of respondents agreed that ICTs have improved their interactions with others on the course.

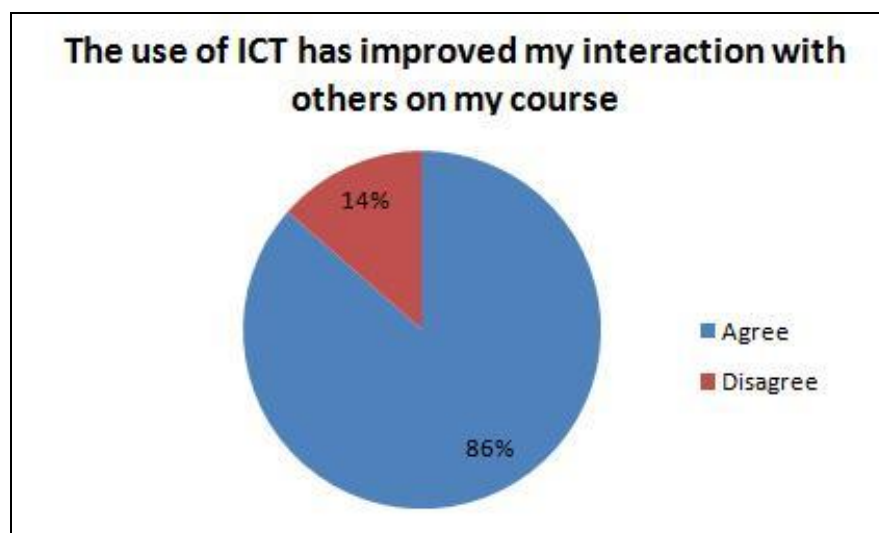


Figure 9-3: ICT to Interact with Others

When asked whether the use of ICTs have improved communication with course lecturers, only 75% agreed. Email and the LMS were the most popular methods of contacting lectures; few had used the telephone. However, only 39% of the respondents had ever contacted their lecturers. This result was validated by a lecturer (Box 9-15).

The two students I was telling you about, they were keen students. They try to interact with their teacher, they send emails, but you know out of these 300 odd students it is only 3 or 4 students like that.

Box 9-15: Mrs Bulegoda-Lecturer

39% of respondents contacted administrators using ICTs; here again the majority of respondents had used either the LMS or email. Daham commented how important ICTs were as a communication tool for employed students (Box 9-16) and Bandula stated that it was “the communication medium” between the programme administration and students (Box 9-17).

There are many professionals working in other fields who take up courses [at my institute]. For them ICT was very important, I think, to get to know the days on which the lectures are conducted and also to contact their course coordinators.	උසස්විද්‍යාත් ලබන්නන් අයෙක් ගොඩක් තිබීමේ මේ ප්‍රායෝගිකයාලි ඒ කියන්නෙ අනෙක් පිල්විස් වල ජොබ් කරන අය ඒ වගේ අය. ඒ වගේ අයට ලේසියි ලෙක්චර්ස් දවස කලිං දැනගන්න. ඒ ගොල්ලන්ගෙ කෝස් කෝඩිනේටර්ස්ලා කන්ටැක්ට් කරගන්න. අන්න ඒ වගේ දේවල් වලට අයි.සී.ටී. ගොඩක් ඉම්පෝටන්ට් වූනා කියලා මම හිතනවා
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Box 9-16: Daham-23Y-M-Matara

It [ICT] is used as a medium of communication. Most of the time it is the medium of communication between the campus [programme administration] and us. Apart from telephone, the other major communication medium is email.	අනිත් එක තමයි සන්නිවේදන මාධ්‍යයක් විදියට. බොහෝ වෙලාවට කැම්පස් එකත් එක්කයි අපිත් එක්කයි ගනුදෙනු කරන සන්නිවේදන ක්‍රමයක් විදියට. දුරකථන මාර්ගය හැර ප්‍රධානම සන්නිවේදන මාර්ගය වෙන්නෙ ඊමේල්.
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Box 9-17: Bandula-29Y-M-Hambantota

59% of respondents agreed that ICTs as a communication tool was more useful for administrators than for learners.

Respondents were given the opportunity to rate their preferred communication method to contact fellow students in the programme.

Table 9-2: Preferred Communication Method

Method of communication	Preference (Rank)				
	1 st	2 nd	3 rd	4 th	5 th
a. Phone (SMS or telephone call)	32	38	10	8	1
b. Email	3	21	19	23	8
c. Social networking sites (Facebook, Twitter, Yahoo or Google Groups)	7	8	27	15	11
d. Moodle discussion forums	4	11	13	14	27
e. Meeting them face to face	50	16	3	2	10
f. Other: please specify					

Table 9-2 shows that in-person communication was the most preferred method among YFU respondents, while SMS or telephone calls ranked second. Email and social networking sites were also used but with a lower preference. This result was surprising because the students at YFU were following courses at a distance but still preferred to meet their fellow students in-

person. Further investigation into this revealed that practical classes, library and computer lab facilities at the University centres were the common meeting places for them. The majority of engineering students (about 70%) were full-time students who regularly came to study at YFU, thus meeting fellow students in-person. According to one of the lecturers, “all serious students” lived or were boarded locally (Box 9-18). This could be another reason why respondents preferred in-person meetings.

[M]ost of them, even though they are from rural areas they lived close by. [...] There were employed people, they were also living here. But *serious students* they also thought they should come and live close by for some reason. So they were in boarding places or so. They were rather *happier to come and talk to me* than communicating through this medium. [...] The fact remains that they appeared like urban as they are close by. [Emphasis Added]

Box 9-18: Dr Gunadasa-Senior Lecturer

As can be seen from Figure 9-4, 82% of respondents agreed that ICTs were helping them to actively engage in their study programme.

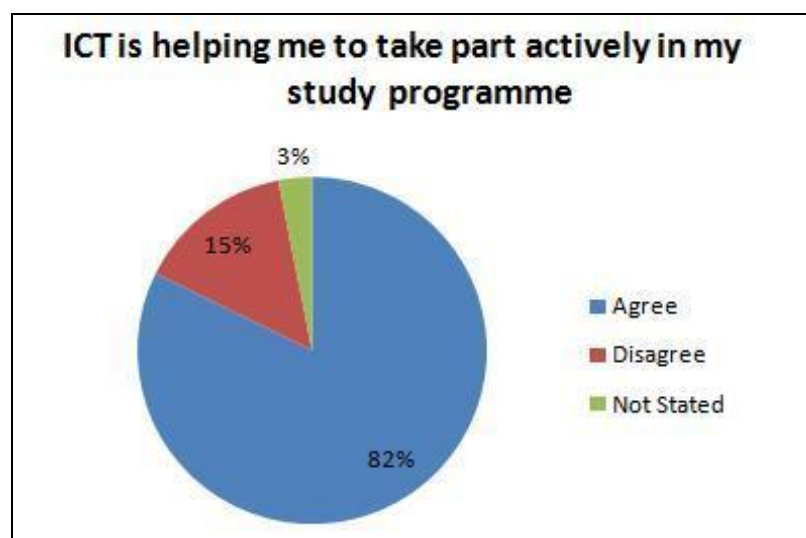


Figure 9-4: ICT for Active Participation

9.3.1.2 ICT as a Tool for Learning

As depicted in Figure 9-5, the large majority of respondents (90%) felt that face-to-face learning was a superior experience.

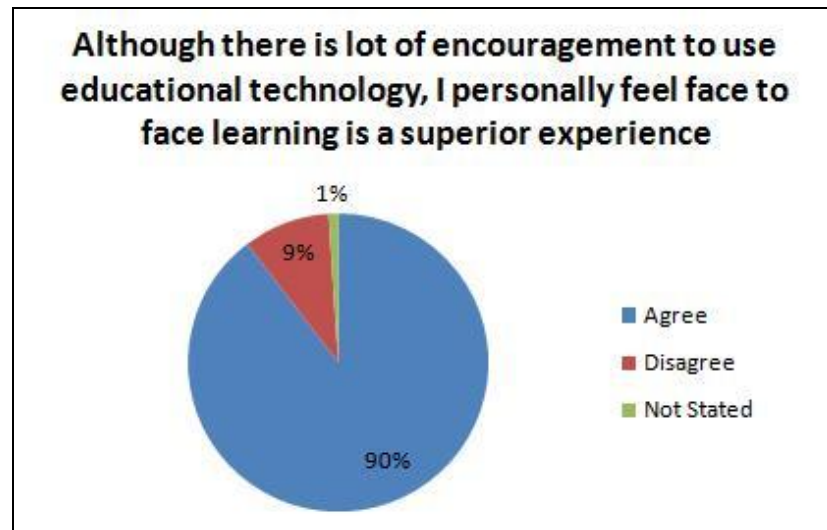


Figure 9-5: Is Face to Face Learning Superior?

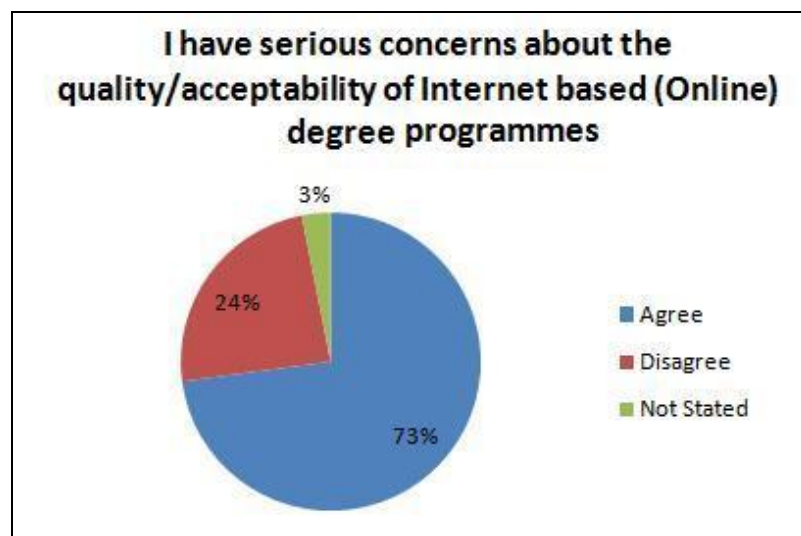


Figure 9-6: Concerns about Quality/Acceptability

Figure 9-6 shows that 73% of the respondents were concerned about the quality/acceptability of online degree programmes. Investigating this further (Table 9-3) revealed that only 60% (3 out of 5 respondents) from the ICT programme had concerns of quality/acceptability of online degrees; this programme was advertised as an “online plus” programme and it could be because they were aware of online delivery that they were not much concerned. However, the number of respondents from the ICT programme was very few.

Table 9-3: Is Face to Face Learning Superior? (programme-wise)

Degree Programme	Agree	Disagree
Science	21	10
ICT	3	2
Technology	28	6
Engineering	12	4
Not Stated	6	1

Figure 9-7 shows that only 38% of respondents agreed that there should be equal recognition for the same degree offered totally online and otherwise.

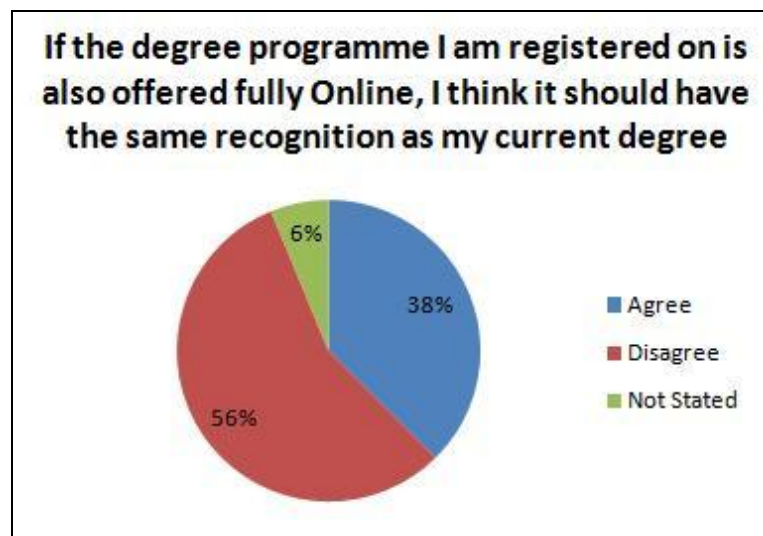


Figure 9-7: Same Recognition for Fully Online Degree Programmes

As can be seen from Figure 9-8, 74% of respondents believed that using electronic resources for learning was important, as they are more up-to-date than books.

Table 9-4 elaborates this result and it can be seen that all respondents from the ICT programme agreed. This is hardly surprising because they were registered on a software engineering programme where technologies changed rapidly. Even the majority of respondents in engineering felt that it was important to use electronic resources; conversely only around 57% of respondents in science programmes felt the same.

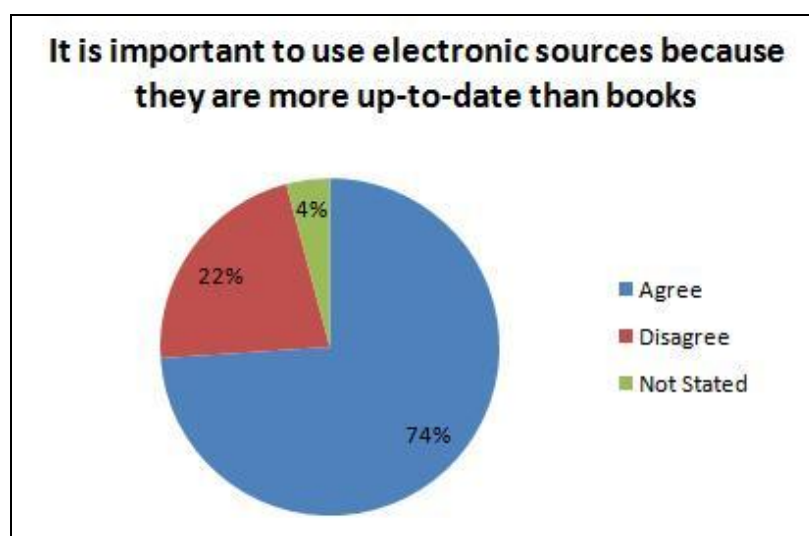


Figure 9-8: Electronic Resources more Up-to-date than Books

Many respondents in engineering were in full-time education and were spending a considerable time at YFU premises – possibly in computer labs where they had access to electronic resources. On the other hand, many science degree respondents were from the regional centre and were in employment – possibly having little time to spend in computer labs accessing electronic resources, thus not recognizing the wealth of knowledge available in that form.

Table 9-4: Electronic Resources more up-to-date than Books (programme-wise)

Degree Programme	Agreed %
ICT	100
Engineering	89
Technology	85
Science	57
Not Stated	71

A respondent registered on the technology programme commented:

When using printed notes the educational information we can gather is limited. For a degree like Engineering it is needed to get lot of upto [sic] date information through the Internet.

Box 9-19: A 25 year-old male from Badulla

Another respondent registered on an engineering programme stated:

Technology is changing each day so to keep abreast.

Box 9-20: A 21 year-old female from Colombo

These comments show that these students were keeping themselves up-to-date by using electronic resources.

64% agreed that learning with new technology was more fun than traditional methods. As can be seen from Figure 9-9, three quarters of students (75%) thought that a thorough knowledge of computing was required in order to use ICTs for learning.

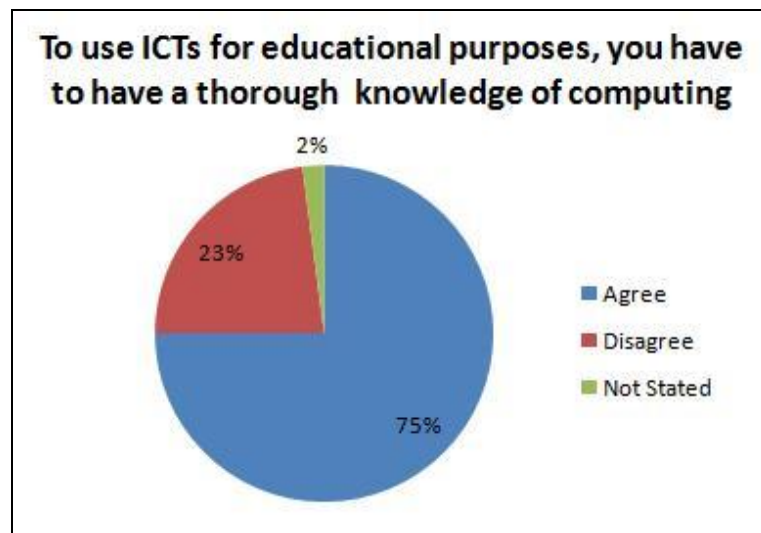


Figure 9-9: ICTs for Education Require Thorough Knowledge of Computing

9.3.1.3 ICTs and Educational Access

Anytime Anywhere Accessibility

A course that is accessible online is theoretically available 24/7 and can be accessed from anywhere. YFU respondents' views on the necessity of anytime and anywhere access are summarized in Table 9-5.

Table 9-5: Anytime Anywhere Access (%)

	Required	Not Required	Not Stated
Anytime Access (%)	84	12	4
Anywhere Access (%)	71	19	10

Some of the respondents' views about anytime access are presented in Table 9-6.

Table 9-6: Reasons for Anytime Access

- | |
|---|
| <ul style="list-style-type: none">• If any obstacle is occurred due to social requirements, so ICT is important• During the day time we have different work to be done. Therefore we can do our studies at a time convenient for us• In distance learning student should [be] free to learn. That is any time accessing [sic] to course materials using technology. It is very, very important. Therefore we can save time• Because there [are] main 3 regional centres. So we have to travel and waste time to go and collect handouts for even one material.<ul style="list-style-type: none">○ If you have printed course materials you can refer to it any time. ICT and internet not available for ordinary people in SL like myself○ Not everyone has internet to use |
|---|

It could be observed that some respondents did not feel that anytime access was a necessity. These students did not possess computers and Internet connections at home and were residing far from Colombo. For someone who does not possess a home Internet connection, anytime accessibility of online course material has little meaning; instead printed material can provide the same service as the student has very correctly mentioned.

Some comments received on anywhere access are presented in Table 9-7. Again students who do not possess connectivity question the value of anywhere access that is one of the superior aspects of online course materials, while others observe the benefits offered by this access.

Table 9-7: Reasons for Anywhere Access

- | |
|--|
| <ul style="list-style-type: none">• We do not need to come to the university, can reduce transportation cost and time consumed for that and that can be efficiently used for studying• If someone have to visit at [sic] outstation or abroad it is comfortable to access in any place• There is no point in come [sic] to the university in every day. That is we can save the time. In job place, at home and where ever we can access and we can get what we want very easy<ul style="list-style-type: none">○ How can you access from anywhere if internet connection is not available and affordable? |
|--|

As can be seen from Table 9-8, out of the 85 respondents who answered both questions on necessity of anytime and anywhere access, 67 thought that both were required. There were 11 respondents who thought neither anytime access nor anywhere access was a necessity. Their demographic details revealed that all of them were from outstations, mainly from Matara. Questionnaires were distributed at YFU's main campus in Colombo as well as in a

YFU's regional centre capturing these valuable responses. There were 6 females and 5 males in this group with 6 teachers – one even teaching computing as a subject. The majority of respondents in this group (9) were below 26 years of age. Out of these 11 respondents, 6 owned computers but only 3 of them had access to the Internet. Geographically they were distributed mainly in the Southern part of Sri Lanka – 5 from Matara, 2 from Galle, one each from Gampaha, Kalutara, and the rural districts of Hambantota and Monaragala.

Table 9-8: Anytime – Anywhere Access (number of students)

		Anytime Access (number of students)	
		Required	Not Required
Anywhere Access	Required	67	0
	Not Required	7	11

Access to Rural Students

As can be seen from Figure 9-10, three quarters of respondents agreed that using television or radio for educational programmes was a good method to easily reach many people. Disagreement was mainly due to the non availability of recording facilities, which meant that students had to be watching/listening to programmes in real time.

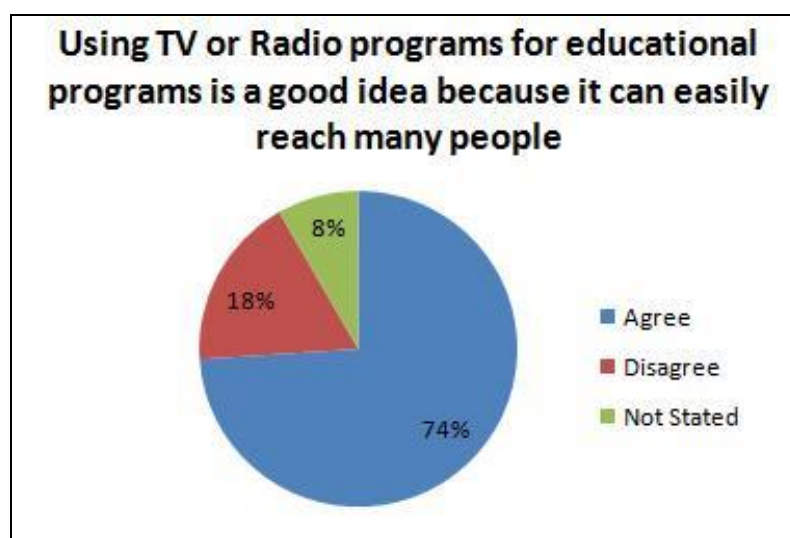


Figure 9-10: Using TV or Radio for Educational Programmes

The majority of respondents (80%) agreed that using online learning and computer-based learning could limit students who were unable to afford them. At the same time, 81% agreed that using ICTs as an optional means of study would be a better approach.

Even though there were students living far from Colombo with difficulties in accessing physical ICT resources, some students from Colombo were not aware of this. For example, a

20 year-old male from Wijerama-Colombo 7 (considered to be the residential area for the wealthiest in the country) wrote in his questionnaire:

I am delighted to help a fellow student. In my experience people are not dangerously deprived of ICT as one would assume.

Box 9-21: A 20 year-old male from Colombo (Wijerama)

A lecturer had concerns about incorporating compulsory components into the curriculum mainly because of the difficulties faced by some rural students in gaining access to computers (Box 9-22).

[T]here *are* problems. There are problems. One obviously is getting access to a centre. May be in Colombo it is not a problem but outside Colombo there are major difficulties getting access to online. There are also problems with English. Most of the activities take place in English, especially when online and students are reluctant. [Original Emphasis]

Box 9-22: Mr Ran-Lecturer

9.3.1.4 ICT and English Knowledge

Respondents from YFU considered good English ability to be very important. For example, Kamani felt that knowing English is a requirement to live in Sri Lankan society (Box 9-23).

It is not only to get through exams that we need English, but some level of English is essential as a social requirement. Some notices are only displayed in English. In such situations it is a must to have Some English knowledge to read and understand.

එක්සැම් සාස්වෙනත් විතරක් නෙමෙයි ඉංග්‍රීසි දැනුම අනිවාර්යයෙන්ම සාමාන්‍ය මට්ටමක තියෙන එක අපට සමාජ අවශ්‍යතාවයක්. සමහර බේර්ඩ් තියෙන්නෙ ඉංග්‍රීසි වලින් විතරයි. ඉතිං ඒ වගේ වූණහම සාමාන්‍ය නොලෙජ් එකක් තියෙන්න ඕන කියවලා අවබෝධ කරගන්න තරම්.

Box 9-23: Kamani-28Y-F-Gampaha

YFU respondents' self-reported level of English varied between excellent and poor with one respondent identifying his speaking ability to be very poor (Figure 9-11).

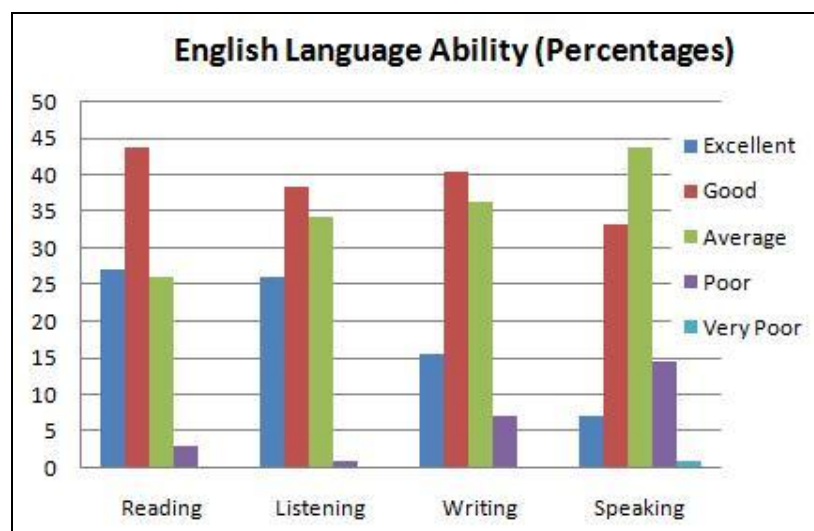


Figure 9-11: English Language Ability (%)

Students seemed more competent in reading and listening rather than in writing or speaking. Many interview participants thought reading and comprehension were more important for a DE programme. For example, Lasith thought one must have good ability in English to read and understand books (Box 9-24).

Without English it is extremely difficult to follow the course. The course I am following is software engineering and books written in Sinhala for that are rare. Even on the Internet, you do not get many resources in Sinhala. Therefore a good English knowledge is a must to read and understand books.	ඉංග්‍රීසි නැතුව නම් කරන්න හරි අමාරුයි. ඒ වූණත් මම කරන කෝස් එක සොල්ට් වෙයාර් ඉංජිනේරු ගත්තත් සිංහලෙන් පොත් පත් අඩුයි. ඉන්ටර්නෙට් එකේ ගත්තත් සිංහලෙන් රිසෝස්ස් අඩුයි. අනිවාර්යයෙන් ඉංග්‍රීසි නොලේස් එක ගොඩක් තියෙන්න ඕන පොත් රිඩ් කරලා තේරුම් ගන්න.
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Box 9-24: Lasith-27Y-M-Kalutara

All Colombo students had an average or above average English ability in all four language skills, except the one student who self-reported to be very poor in speaking (Table 9-9). In fact, Bandula's quote in Box 9-25 describes why this was so. Furthermore, a study conducted in the OUSL has revealed that access to its programmes conducted in English language medium was highly skewed towards the metropolis and that student success on these programmes was significantly correlated with the learner's proficiency of the English language (Vidanapathirana and Gamini 2009).

Table 9-9: English Language Ability Colombo Students vs Other Students (%)

%	Excellent		Good		Average		Poor		Very Poor	
C = Colombo O = Other	C	O	C	O	C	O	C	O	C	O
Reading	25	28	50	41	25	27	0	4	0	0
Listening	25	27	55	33	20	39	0	1	0	0
Writing	25	13	40	40	35	37	0	9	0	0
Speaking	15	5	30	33	55	41	0	19	0	1

For some students, their lack of English knowledge has become a huge problem. English is hardly used in the villages. So we just pick a bit [of English] from here and there and that is what we bring in with us. While following this course or at the work place we manage to add a little more to our knowledge. Therefore it [English] definitely is an obstacle for us in accumulating knowledge. [...] In villages English usage is minimal. On the other hand in towns the usage is high so a child gets self motivated to learn English and in addition will have more learning opportunities as well.	ඉංග්‍රීසි දැනුම ලොකු ගැටළුවක් වෙලා තියනවා සමහර ළමයින්ට. අපේ ගම් වලින් අපි එතකොට පාවිච්චි වෙන්නෙ නෑ. කොහෙන් හරි අපි එකතු කරගත්තු ටිකක් නෙ එන්නෙ. එතකොට මේ කෝස් එකේ හරි රැකියාවක් එක්ක හරි තමයි අපි කොටසක් එකතු කර ගන්නෙ. එතකොට ඉතිං කොහොමටත් අපට ඒක ලොකු බාධාවක් වෙනවා. හුගක් වෙලාවට. ඉගෙනුම ලබා ගැනීමේදී, දැනුම ලබා ගැනීමේදී වෙලාවකට ඒක ප්‍රශ්නයක් වෙනවා.[...] ග්‍රාමීය ප්‍රදේශ ගත්තහම භාවිතාව බොහොම අඩුයි ඉංග්‍රීසි. නගර පැත්ත ගත්තහම භාවිතාව වැඩියෙනෙ. එතනම ස්වයං උත්ප්‍රේරණයක් තියනවා ළමයාට ඉංග්‍රීසි ඉගත ගන්න, වැඩි අවස්ථාවක් තියෙනවා
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Box 9-25: Bandula-29Y-M-Hambantota

Bandula's statement was corroborated by a lecturer who added:

[S]ome of the students may find it difficult. We got to know from regional students specially. Those who are not exposed to much English may find it difficult.

Box 9-26: Mrs Bulegoda-Lecturer

The English language ability of respondents in different programmes did not produce discernable patterns. Therefore, the important observation from the above discussion is that there is a considerable difference between the English language skills of respondents from Colombo and from other districts.

As shown in Figure 9-12, nearly three quarters of the students (73%), agreed that using computers and electronic resources for learning was difficult if one was not competent in English.

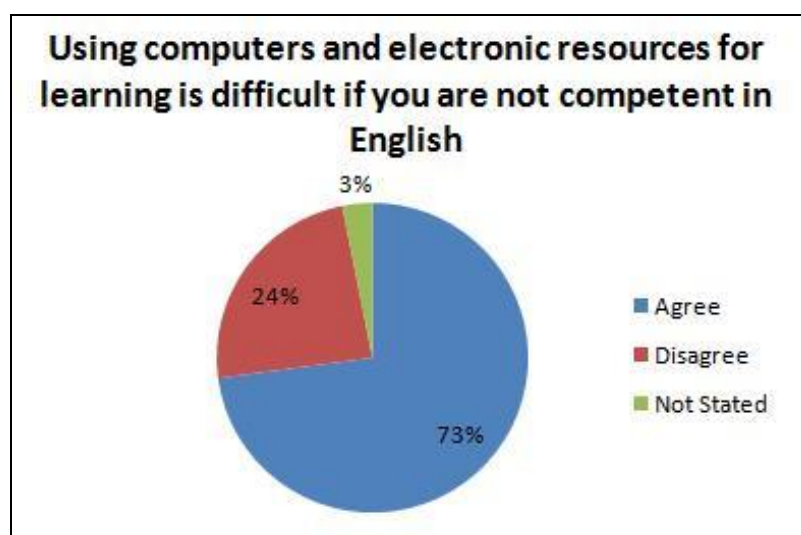


Figure 9-12: Learning with ICTs and English

24% of respondents disagreed with this; for example, Roshan thought that English was not so difficult to learn. For him, there was no excuse for anyone because everyone had been studying English up to A/L and “13 years [wa]s more than enough”.

We go to school for 13 years and we learn English till we do A/L. For A/L also we have to do an English paper. So I don't know how well English is taught in other rural areas. But I think what we learned for 13 years is more than enough [...] I don't think it is so difficult. It might be a problem for some people who are coming from far. But still they are having English. It is a prerequisite for everybody. [...] There is no excuse, because of English I failed.

Box 9-27: Roshan-24Y-M-Colombo

Daham also thought that English competence should not be a problem and he justified his position with facts and examples (Box 9-28). These two quotes (Box 9-27 and Box 9-28) again depict the division between Colombo students and others, especially regarding the level of empathy they have for students with a lower level of English ability. Roshan from Colombo seemed to think that all students in Sri Lanka enjoyed the same educational opportunities that he had in Colombo. Daham was more pragmatic in assuming students who had passed the English course would have sufficient knowledge for their degree.

<p>In order to be eligible to follow level 3, we have to sit for an English grading test. If you don't pass the grading test there is an English course - denoted by the code LSE 1303 - that you will have to follow. [...] My friends tell me that it is similar to the A/L English paper. [...] One must pass that in order to register for level 4 subjects. Because of this I think students gain a good knowledge from this course offered by the campus. I think that is sufficient for students to continue [their studies].</p>	<p>ලෙවල් 3 වලට සුදුසුකමක් විදියට කොලීරිකේෂන් එකක් විදියට අපිට මුලින්ම කියනවා ශ්‍රේඩ්. ටෙස්ට් එකක් ඉංග්ලීෂ්. ඒ ශ්‍රේඩ් ටෙස්ට් එක පාස් වෙන්න ඕන. නැත්නම් අපට තියෙනවා කෝස් එකක් ෆොලෝ කරන්න. LSE 1303 කියන කෝස් කෝඩ් එකක් එක්ක, ඉංග්ලීෂ් කෝස් එකක්. ඒක ෆොලෝ කරන්න වෙනවා. [...] යාළුවෝ කියන විදියට 'ඒ ලෙවල්' වලට ගොඩක් 'ඒ ලෙවල්' ඉංග්ලීෂ් පේපර් එකට ලගින් යන විදියක් තමයි කියන්නේ. [...] ඒක අනිවාර්යයෙන් පාස් වෙන්න ඕන ලෙවල් 4 සබ්ජෙක්ට්ස් ගන්න. ඒක හින්දා මම හිතනවා ළමයින්ට හොඳ දැනුමක් ඇති ඒකෙන් කැමිපස් එකෙන් දෙන කෝස් එක ඉස්සරහට යන්න කියලා මං හිතනවා. ඒක ඇති කියලා.</p>
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Box 9-28: Daham-23Y-M-Matara

As can be seen from Figure 9-13, 56% of respondents were concerned that the use of computers and electronic resources could affect their learning due to the lack of local language content.

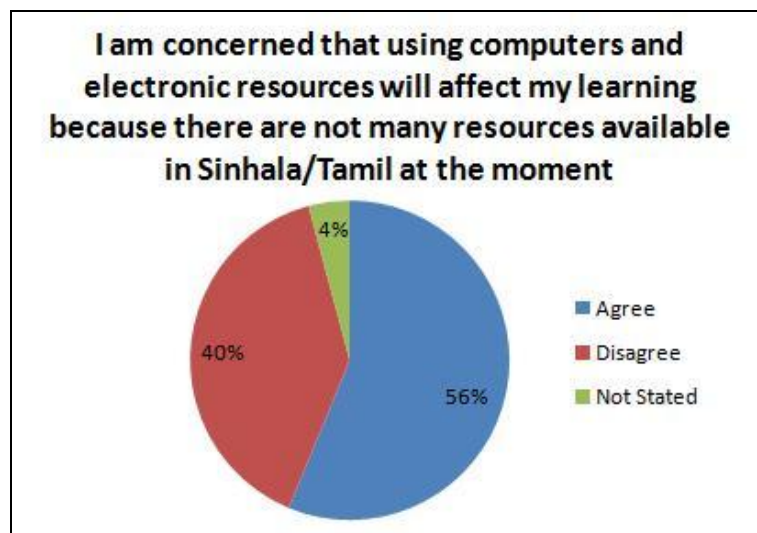


Figure 9-13: Concern on the Non-availability of Local Language Content

Table 9-10: Concern on Non-availability of Local Language Content (programme-wise)

Degree	Agreed %
Science	72
ICT	60
Engineering	50
Technology	42

Table 9-10 shows the percentage of respondents who thought that the non-availability of local language content could affect their learning (according to degree programme). The majority (72%) from the science programme were concerned about this while only half of the engineering students were worried; however their English language ability was not correlated with this result.

9.3.1.5 Summary

The introduction of ICTs was intended to improve quality and the student experience. Some students believed that ICTs would reach disadvantaged students while others did not believe this would be the case in reality. ICTs as a cost-reduction mechanism was strongly believed as well as strongly disbelieved to be a key factor in its use. Students who lacked sound economic backgrounds feared the introduction of ICTs would increase course fees, thus making them unaffordable.

There was general consensus that ICTs improved communication and interaction; however meeting in-person for communication was the most preferred method by YFU respondents. Students were more conservative when ICTs were considered as a tool for learning. Despite accepting the necessity of electronic resources for learning, students were reluctant to recognize a degree earned online to be equivalent to a degree earned in-person. There were concerns about the quality/acceptability of online programmes.

Anytime anywhere accessibility of materials was seen as a major advantage by students who possessed Internet connectivity. Using online and electronic resources for learning was believed to limit students who were unable to afford them.

The English language ability of students varied widely with students from Colombo demonstrating a higher level of English proficiency. It was again evident that students from Colombo were less empathetic to students from rural areas who struggled with English.

More than a half the students were concerned that the inadequacy of local language resources could affect their learning.

9.3.2 Utilizing ICTs for Learning

This section presents the ways in which students used ICTs to engage in their study programme.

2. d. How do they utilize ICTs to engage in their learning programmes?

None of the respondents at YFU were registered on “online plus” programmes. Although advertised as an “online plus” programme, the ICT programme conducted “day-schools” and assignments were only accepted in hard copy; thus it could be considered a blended online programme. All other programmes were supplementary online. Students for the ICT programme were actively selected from applicants while entry was open for all other programmes.

As depicted in Figure 9-14, printed course notes were the most frequently used; library resources too were often used. Websites, search engines, and digital copies of lecture notes were also used but online discussion forums, TV or Radio programmes, and electronic journals and databases were rarely used.

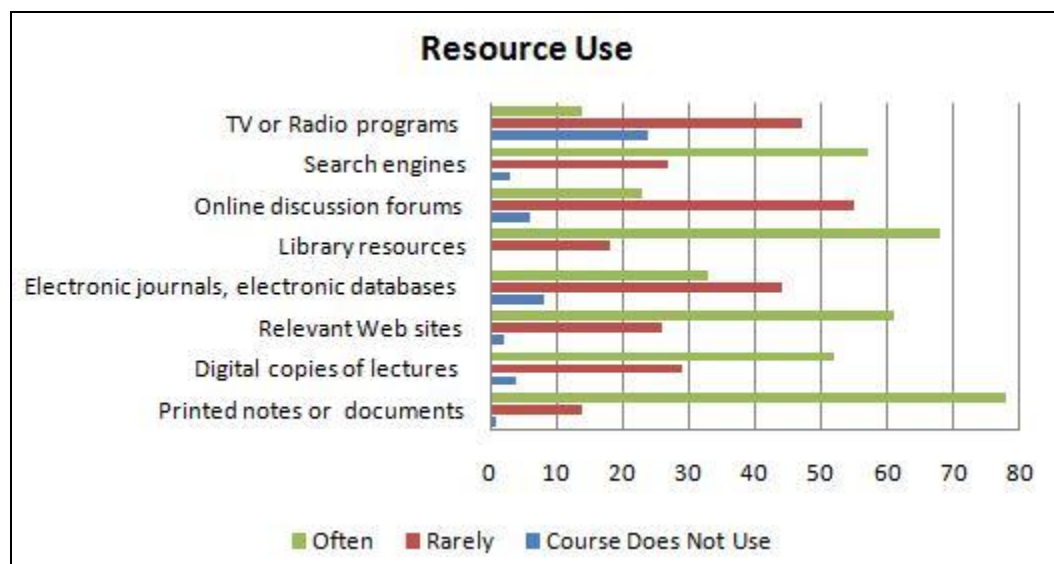


Figure 9-14: Resource Use

9.3.2.1 Discussions

Less than a quarter of respondents utilized online discussion forums. As seen previously in Table 9-2, YFU respondents' preferred method for communication with colleagues was meeting in-person; this could be a reason why the respondents were not utilizing online discussion forums but instead clarified issues by discussing them in-person with their colleagues as Dinesh had mentioned (Box 9-10). However, there were respondents from distant locations, who utilized discussion forums to ask their lecturers questions. For example, Maneesha explained how discussion forums helped her in distance study (Box 9-29).

To tell you the truth I too do not have the facility to access Internet from home. Actually when I was unable to travel to Colombo, what I did was to pose my queries to our lecturer. Those days we didn't have lectures at the campus. Our lecturer had uploaded a practice test for us. We did that test and asked [posted] questions that arose when doing the practice test. It was a great help.	ඇත්තටම මටත් ගෙදර ඉන්ටනෙට් යන්න පුළුවන් කමක් නෑ. මමත් ඇත්තටම කොළඹ යන්න බැරි වෙලාවට සර්ගෙන් ප්‍රශ්නයක් අහන එක තමයි කලේ. ගොඩක් දවස් වල කැමිපස් එකේ අපට ඒ දවස් වල ලෙක්චර්ස් තිබුණෙ නෑ. ප්‍රැක්ටිස් වෙස්ට් එකට සර් ක්වෙස්චන්ස් දාලා තිබුණා ඉන්ටනෙට් එකට. ඒවා කරා අපි, ඊට පස්සෙ තියන ප්‍රශ්න අහලා යැව්වා. ඒක අපට ගොඩක් ලොකු උදව්වක් වුණ.
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Box 9-29: Maneesha-24Y-F-Kandy

Dr Gunadasa, a senior lecturer, felt that students were happier to meet him rather than using the LMS to communicate. This was corroborated by Daham who mentioned that he did not feel the need to use the online facility to contact lecturers as he was visiting the campus anyway at the weekends (Box 9-30).

I anyway go to the campus in the weekend. So when I have a query I have the opportunity to ask from lecturers and get information from them. Therefore I didn't feel the need to be connected online.	ගැටලුවක් ආවම අපි ඇතුළේ ඉන්න ලෙක්චර්ස්ලගෙන් මම කොහොමත් ටික් එන්ඩ්ස් කැමිපස් එකට එනවා. ඒ නිසා ඇතුළේ ඉන්න මැඩම් ල ගෙන් ලෙක්චර්ස් ල ගෙන් අපට තොරතුරු ලබා ගන්න පුළුවන් නිසා ඔන්ලයින් අපට සම්බන්ධ වෙන්න අවශ්‍යයි කියලා හිතුණෙ නෑ.
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Box 9-30: Daham-23Y-M-Matara

Lecturers explained the reasons for students' reluctance to participate in discussion forums.

You have to be going there regularly and see that you are actively answering their queries and all that. Most of the time they come, log in and just have a look and go away. Their reluctance is mainly to put something down on writing where their name appear[s]. They are very reluctant to do that. But once they have started and when they see others doing it that always the difficult part getting one or two people to take part.

Box 9-31: Mr Ran-Lecturer

Dr Gunadasa felt that the low level of participation in discussions was not attributable to the level of English but rather a culturally-bound habit of asking questions privately not publicly (Box 9-32).

In our culture people expressing their ideas is less. [...] When you post it is there in big letters, said by this person. That may have been there. It is not specifically English. That is what I am saying. Even if I run it in Sinhala my guess is that, that factor will be there. Very rarely somebody asks questions even in a day school.

Box 9-32: Dr Gunadasa-Senior Lecturer

Dr Gunadasa was teaching a subject area that had many equations and as their instantiation of Moodle™ editor did not support equation editing, he felt it was another reason for his students to be reluctant to use Moodle™ discussion forums.

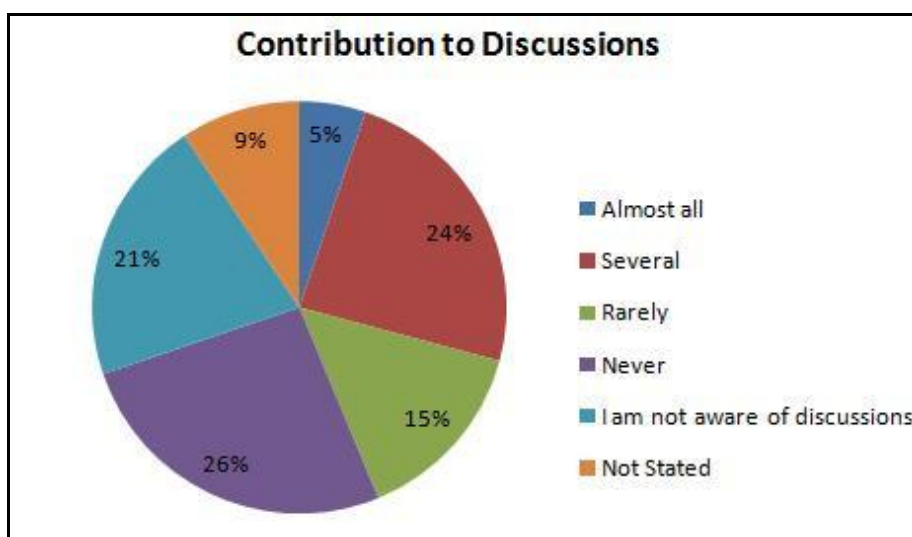


Figure 9-15: Contribution to Discussions

As can be seen from (Figure 9-15), contributions to discussions were low; only 5% of respondents contributed to almost all discussions. 26% of respondents had never contributed to a discussion and another 21% were not even aware of discussions. Table 9-11 shows that only ICT students actively participated in online discussions. From the above it can be seen that online discussions were not popular among YFU respondents.

Table 9-11: Participation in Online Discussions (programme-wise %)

Degree	Almost all	Several	Rarely	Never	Not aware
Science	0	10	14	45	31
ICT	40	60	0	0	0
Technology	7	35	16	16	26
Engineering	6	31	19	38	6

Not all respondents were able to meet colleagues in person to discuss matters. They preferred telephone conversations because their colleagues were almost always in transit. For example, Bandula described his experience (Box 9-33):

<p>It is a simple method like telephoning or email that we get to use. [...] Though I said that we use it for group activities, most of the time we don't get to do even that. When I am free another friend would be busy. Even when I tried to contact someone at this time of the day [9.15pm] they would be either on a train or on the road. Many have come from far away villages and work here [in Colombo]. Most of the time the only feasible means is the telephone. Even if you are on a bus, on a train or on the road that is the easiest way to communicate and that is why we use it. Generally we don't get the chance to use Skype much.</p>	<p>දුරකතනය හෝ ඊමේල් ක්‍රමයක් වගේ පොඩ් දෙයක් තමයි කරගන්න වෙන්නෙ.[...]හුගත් වෙලාවට සාමූහික ක්‍රියාකාරකම් වලට ඒවා භාවිතා කරනවා කිව්වට හුගත් වෙලාවට අපට එහෙම කරන්න වෙන්නෙත් නැහැ. සමහර වෙලාවට මම නිදහස් වෙනකොට තවත් යාළුවෙක් නිදහස් නැහැ. එයාට වැඩ. සමහරෙක්ට මේ වෙලාවට [රාත්‍රී 9.15] කෝල් කලත් එක්කො කෝච්චියක, එක්කො පාරක එහෙමෙන. ඉන්න අය ඇත ගම් වලින් ඇවිල්ලා මෙහේ ජොඩ් කරන අය. [...] හුගත් වෙලාවට භාවිතා කරන්න පුළුවන් දුරකතන මාර්ග තමයි. ඩස් එකේ හිටියත්, ට්‍රේන් එකේ හිටියත්, පාරේ හිටියත් යමක් ඉතිං යම් පමණකට හරි එකතු කරගන්න පුළුවන් පහසුම ක්‍රමය තමයි දුරකතන මාර්ග, ඒක තමයි හුගත් වෙලාවට භාවිතා කරන්නෙ. සාමාන්‍යයෙන් ස්කයිප් හරි මේකක් හරි භාවිතා කරන්න කෙනෙකුට ලැබෙන්නෙ බොහොම අඩු අවස්ථා ගණනක්.</p>
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Box 9-33: Bandula-29Y-M-Hambantota

Thus it was the telephone facility that helped respondents to be in contact with colleagues.

9.3.2.2 Electronic Resources and Library Resources

YFU students received all course notes in print with additional text books for reference; uploaded notes, handouts and presentations were resources they sometimes received in digital format. As can be seen from Table 9-12, 70% of the respondents preferred print; only a few preferred video or digital forms of materials.

Table 9-12: Preferred Medium

Medium	Number of Students	%
Print	61	70
Video	16	18
Digital	6	7
Audio	3	3
TV broadcast	2	2

YFU library at the main campus has a vast collection of resources including electronic resources. Regional centres hold a small collection of audio and video tapes and books relating to programmes offered at the centres. YFU library was often used by students but regional centre resources were reported to be under-used. One reason for this could be the fact that regional centre resources contain mostly reference materials, which students have to access on the premises and cannot borrow. Another possibility is that for many students the location of the nearest centre may still be a significant distance away.

Respondents were aware of electronic resources but they had issues in accessing such resources (Box 9-34). For example, Manu and Dinesh described why they could not access YouTubeTM to search for videos on product design (Box 9-35).

We as engineering students need to view video lectures, read notes. We also have to go to other networks. When we try to go to some of the links they have been blocked. I don't know what the reason is.	අපි ඉංජිනේරු ස්ටුඩන්ට්ස් ලෙක්චර්ස් බලන්නත් ඕන, නෝට්ස් බලන්නත් ඕන. ඒ වගේම තමයි තව නෙට්වර්ක් වල යන්නත් ඕන. සමහර අපි ලින්ක් වලට ගියහම ඒවා ඩිලොක් කරලා තියෙන්නෙ. මං දන්නෙ නෑ හේතුව ඇයි කියලා.
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Box 9-34: Pulathisi-23Y-M-Gampaha

M: In our library we can't use YouTube. So we can't use YouTube to get knowledge as we do sometimes.	මි:අපේ ලයිබ්‍රේරියේ යු ටියුබ් භාවිතා කරන්න බෑ. යු ටියුබ් එකෙන් නොලේස් එක ගන්න බෑ සමහර අවස්ථාවල.
D: We have a subject called Product Design. For that we need to observe how others have done similar designs. So what do we do but study similar kinds of product designs through YouTube. But we don't have that opportunity now because it is blocked. Why do they implement such limitations?	දී:අපිට අවශ්‍ය වෙනවා අපේ තියනවා ප්‍රඩක්ට් ඩිසයින් කියලා. ඒකෙදි අපිට කොහොමද අනෙක් කම්පියර්ට සමඟම වි නිර්මාණය කරලා තියෙන්නෙ කියලා බලන්න අවශ්‍යතාවයක් ඇති වෙනවා. ඊට පස්සෙ අපි මොකද කරන්නෙ යු ටියුබ් එක හරහා ඊට සමාන වගේ ප්‍රොඩක්ට්ස් ගැන අපි අධ්‍යයන කරනවා. ඒ අධ්‍යයන කරන්න අපට අවස්ථාව ගන්න බැහැ ඒවා ඩිලොක් කරලා තියෙන නිසා. එකකොට ඇයි එහෙම ලිමිට් කරන්නෙ.

Box 9-35: Manu and Dinesh-23Y-M

Mr Ran, a lecturer, used MoodleTM Wikis for group projects because of its facility to keep track of individual participation; he had noticed that his students were exchanging ideas and materials using other platforms. He was displeased to learn about the University policy of blocking some sites and thought that the University should “come up with better solutions” to the problem of limited bandwidth.

I told them [students] it is visible to me only if you do it here using the facilities provided in Moodle. Otherwise I can't track [participation in group work][...] But even then sometimes I get messages talking about things they have exchanged at other sources. But the problem is the University has recently come up with a policy to block off some of those sites. They don't let you access the FaceBook or whatever. [...] Decisions have been taken at other forums. We have only been informed. We have no influence on that. I am not very happy about some of those limitations. OK I mean I know because there have been problems with bandwidth and had to limit. But they have to come up with better solutions not just put blankets and put this kind of blockages and things like that.

Box 9-36: Mr Ran-Lecturer

Respondents who used electronic resources were aware of the credibility issue of information sources. For example, some of the interview participants, especially from the ICT programme, named specific sites that they would use instead of reading through pages from any site that appeared on a Google search.

9.3.2.3 Assignments

The ICT programme was supposed to have online assignment submission but due to technical issues (at the time of writing) it had not been implemented. Lasith from the ICT programme felt that online assignment submission would be a huge advantage for employed students (Box 9-37).

I believe online assignment submission is a significant feature. Otherwise we have to attend the university on the day of submission. If it happened to be a working day we have to either apply for leave or short leave to submit the assignment, because we have to submit on the due date. That is a huge disadvantage. If we can get to submit online, I think it is a very good thing.

මම තිතන්නෙ ඔන්ලයින් අසයින්නේ එක සබ්මිට් කරන්න ලැබෙන එක ලොකු පිටර් එකක් කියලා. අදර් වයිස් අපිට අනිවාර්යයෙන්ම යන්න වෙනවා සබ්මිට් කරන්න ඕන දේව් එකට. ඉතිං ඒක වර්කිං දේ එකක් නම් අපි ඔපිස් එකේ ලිව් එකක් හරි කොට් ලිව් එකක් හරි දාලා එන්නම් වෙනවා. අසයින්නේ එක දෙන්න. මොකද ඩියු දේව් එකට දෙන්න එපැයි. ඒක ලොකු ඩිස්ඇඩ්වාන්ටේජ් එකක්. නමුත් අපිට ඔන්ලයින් සබ්මිට් කරන්න ලැබෙනවා නම් ඒක ලොකු දෙයක් කියලා මම තිතනවා.

Box 9-37: Lasith-27Y-M-Kalutara

Other programmes such as engineering or science only accepted traditional hardcopy assignments. Many of the YFU programmes utilized anti-plagiarism practices. For example, engineering students received assignments that were customized according to their registration numbers making it difficult to copy from another student (Box 9-38).

The assignments we get would vary according to the last digit of the registration number. With that the problem [plagiarism] can be solved because then it is difficult to copy	අසයින්නන්ට එකක් වුණත් අපට කරන විදිය තමයි රෙජිස්ට්‍රේෂන් නම්බර් එකේ පිලිවෙලට තමයි අසයින්නන්ට ලැබෙන්නෙ. නොම්මරේ අන්තිම ඩිජිට් එක අනුව වෙනස් කරගන්න පුළුවන්. එහෙම ඒ ප්‍රශ්න විසඳගන්න පුළුවන්. එතකොට කොපි කරන්න අමාරුයි.
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Box 9-38: Manu-23Y-M-Badulla

One of the lecturers from YFU said that he did not mind students copying from somewhere as long as one understood what one had copied; nevertheless he tried to minimize such incidents by introducing a viva component to the assignment where each student had to justify his/her work.

We try to make questions to minimize it [plagiarism]. One is I don't really mind someone taking something from somewhere, but student should have understood what it is and should also be relevant to the question that has been posed. What I try to do is not to put questions that can be answered like that. Not just say describe something where the student can Google and copy and paste it to the assignment. Asking something where the theory is being used for a given specific problem so that he or she can take the logic or fundamentals but should have some kind of in terms of the quantity or measure to tackle that specific problem. Another thing I do for especially for assignments is that I get them and have a viva. At the viva they have to justify what they have written.
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Box 9-39: Mr Ran-Lecturer

However, students were aware of methods of copying, while still presenting the materials as their own. Manu described two such methods but thought that allowing students to copy an assignment was a deficiency of the course (Box 9-40).

There are different ways of copying. You can copy "one-to-one" [produce an exact copy of the original] or you can write it in your own words. If one is just producing something without understanding, as is done in "one-to-one" copying, I think of it as a deficiency in the course and also as something being wrong with that particular person.	කොපි කරනවා කියන එක මෙහෙමයි කරන ක්‍රම කියෙනවානෙ. වත් වු වත් පුළුවන් එහෙම නැත්නම් දැනුම අරගෙන ඒක විකක් ගලපලා ලියන්නත් පුළුවන්. [...] දැනුම නොගෙන අර වත් වු වත් කියන කරාව අනුව කලොත් කෝස් එකේ තියන අඩුවක් විදියටයි, ඒ පුද්ගලයාගෙයි තියන අඩුවක් විදියටයි මම දකින්නෙ.
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Box 9-40: Manu-23Y-M-Badulla

Roshan from the ICT programme strongly believed that information should be freely available and usable by anyone (Box 9-41). It would appear that these respondents did not consider plagiarism to be a serious concern.

Information is information. It doesn't matter whether they cut and paste or whether you or.. we didn't carry when we were born. So we have to learn from somewhere. At the end of the day if you can understand and tell it to somebody else I think there wouldn't be any problem with copying and pasting.

Box 9-41: Roshan-24Y-M-Colombo

Respondents utilized web resources to find information required for assignments. Pulathisi acknowledged how the Internet had helped them with information for assignments (Box 9-42).

We used the Internet a lot to find information for our assignments, which was a great help.

අපි ගොඩක් නෙට් එක භාවිතා කරලා අසයින්නේ වලට ඕන ඒවා සොයා ගන්නා. ඒක නම් අපට උදව්වක් වුණා.

Box 9-42: Pulathisi-23Y-M-Gampaha

Some programmes used online quizzes as a form of evaluation. Maneesha spoke highly of her experience with an online test (Box 9-43).

It was my first time facing an online exam. I don't have any fear now, as I have experience on how to do it if there is another one [online exam]. That is a huge advantage.

මම පළවෙනි පාරට තමයි විභාගෙකට මුණ දුන්නෙ ඔන්ලයින්. ඉතිං දැන් බයක් නෑ ඇත්තටම ආයෙ එස්සැම් එකක් ආවොත් කරන්නෙ කොහොමද කියලා බයක් නෑ. දැන් ඒ පුරුද්ද තියන හන්දා. ඒක නම් ගොඩක්ම ලොකු වාසියක් වුණා.

Box 9-43: Maneesha-24Y-F-Kandy

A lecturer mentioned how he had been prepared for network failures and connection issues when he was conducting online quizzes, as the system was not 100% reliable (Box 9-44).

[I]f you are having say 50 students we always have something in reserve so that we can generate question papers and printed out question papers ready beforehand so that something happens or login fails or unexpected happens we can give them the choice or option to do it on a piece of paper with printed question papers. So that type of backup has to be there.

Box 9-44: Mr Ran-Lecturer

Maneesha and 2 others faced difficulties while submitting an online quiz and had to repeat the exam (Box 9-45).

When submitting the online exam, we clicked the submit button. But the page didn't work and we didn't get marks. Don't know what happened but it happened to 3 of us. As it did not get submitted, we got zero marks. So we told our lecturer and he arranged another day for the 3 of us to do the online exam again. So we did the exam again. The first time we were not told to save our answers. But the second time we were afraid of losing them [answers] again so we first saved it and then submitted.	අපි ඔන්ලයින් එක්සැම් එක සබ්මිට් කරන වෙලාවේ සබ්මිට් බ්ටන් එක අපි එබුවා නමුත් ඒ පේජ එක ගියේ නැතුව ලකුණු ආවේ නෑ. මොනවා වුණාද දන්නේ නෑ. අපි තුන්දෙනෙකුට ඒ ප්‍රශ්නය ආවා. සබ්මිට් වුණේ නැතුව ලකුණු බිංදුවයි කියලා ආවා. අපි කරලා තිබුණා. අපි සර්ට් කිරිවා. ඊට පස්සෙ සර් අපි තුන්දෙනාට වෙනම දවසක් දාලා අපි තුන්දෙනාටම නැවත ඔන්ලයින් එක්සැම් එක කරන්න දුන්නා. අපි ආය දවසක වෙනම කලා. කලින් කරපු වෙලේ අපිට සේරි කරන්න කියලා කිව්වේ නෑ. ඒ පාර බයටත් එක්ක සේරි කරලා ඊට පස්සෙ තමයි සබ්මිට් කලේ.
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Box 9-45: Maneesha-24Y-F-Kandy

Even after having to repeat the exam, Maneesha was still pleased about having experienced an online exam, an opportunity she would otherwise not have had.

9.3.2.4 Summary

YFU students used printed material and library resources extensively. They were reluctant to participate in discussion forums; instead they used in-person or telephone discussions. YFU programmes customized assignments for individual students, reducing the incidence of plagiarism. Other methods such as incorporating a viva were also used. Both students and lecturers seemed to believe that as long as one understood what was being written, copying was not a major issue. Online quizzes were used for evaluations; however some students faced difficulties with these due to the lack of system reliability and in some instances students had to re-sit an exam.

9.4 Gaining Access to Education

This section first examines why students enrolled on YFU programmes and then explores their readiness with respect to skills, motivation and resources.

3. How has the YFU programme influenced 'access' to HE?

e. Why have students enrolled on YFU programmes?

9.4.1 Why Select Distance Education

Respondents had selected YFU programmes for various reasons (Table 9-13).

Table 9-13: Reasons for External Degree (%)

Reason	%
I wanted a part time course that can accommodate my other commitments	64
I wanted to study independently in my own time	62
The fees for this course is affordable	59
There is a regional centre/ private tuition class that supports learners	54
I do this course partly or wholly because of the use of ICTs in teaching	51
Difficulty / an unwillingness to attend regular classes	44
I did not get my preferred university at the university selection	42
I did not get my preferred course at the course selection	27
I won a scholarship that covers my course fees for this course	20

The majority of respondents had selected YFU programmes due to flexibility. The option of independent study and the affordable course fees were also reasons for the selection of YFU programmes. 54% of respondents had selected the programme because of the availability of regional centres. The non-availability of their preferred course or university seemed to have had very little impact on their selection of programme. However, in interviews it emerged that the failure to gain a place in the conventional state university system had in fact been an important reason for the selection of DE at YFU.

9.4.1.1 Affordable Course Fee

Affordable course fees was another important reason for selecting YFU courses (Box 9-46).

I was longing for an opportunity to study software engineering. But the fees charged in private universities are not affordable for me. I mean, there is an amount I can afford to pay. This is something that I can afford, and can do while doing my other work.	හුගක්ම කැමැත්තෙන් හිටියා සොල්ට් වෙයාර් ඉංජිනේරු කරන්න. නමුත් පුද්ගලික යුනිවර්සිටිස් තියනවා, හුගක් වාස් කරනවා. ඒක මට අන්වේයාර්බල්. සාමාන්‍යයෙන් මට වියදම් කරන්න පුළුවන් ප්‍රමාණයක් තියෙනවානෙ. ඒ නිසා මට දරාගන්න පුළුවන් විදියට වියදම් කරලා, මට තව හෙදර වැඩක් කරගන්න හමන්ම [...] කියලා හිතුනි.
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Box 9-46: Kamani-28Y-F-Gampaha

For Kamani, affordability of the course fee was the main reason for selecting the ICT programme; for Lasith and Bandula, too (Box 9-48, Box 9-50), the course fee was a decisive factor.

9.4.1.2 No Previous Opportunity for University Education

There were many students who joined YFU because they had failed to gain a place at the state university system after finishing the allowed 3 attempts at the A/L examination. For example, Maneesha was unable to secure a place and selected to pursue her HE at YFU (Box 9-47).

I came to [REDACTED] because I did not have enough marks to obtain a place in any another campus [university]	මට වෙන කැම්පස් එකකට යන්න ලකුණු මදි වුණා. ඉතිං ඒ අනුවයි [REDACTED] එකට ආවේ
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Box 9-47: Maneesha-24Y-F-Kandy

These were some reasons stated in questionnaires by respondents in similar circumstance.

Table 9-14: Reasons for the Selection of DE

<ul style="list-style-type: none"> • Not enough GCE A/L marks to enter any other university • I could not get into a traditional university and due to economic difficulty I did not have any other place to get a higher education • Being unable to attend traditional government university and also this is the only institute that allows higher education with minimum fee

Thus it can be seen that many students who were denied access to conventional state university education due to the lack of places, had selected YFU as an alternative in order to pursue HE.

9.4.1.3 Flexibility

There were respondents who originally had places at state universities, but had dropped out of the state university system; Bandula faced economic difficulties, which led him to abandon his course in order to support his family, while for Daham it was a lucrative job opportunity that was too good to be turned down. Now more economically stable, Bandula wanted to pursue a HE (Box 9-48). Envisioning more prospects with a degree qualification, Daham is also pursuing his HE (Box 9-49). Thus, it can be seen from the evidence so far that YFU has not only extended educational opportunities to those who were excluded from the conventional state university system, but also to those who had the opportunity but either could not pursue or could not complete a degree in the conventional state university education for some reason.

Once I was an internal student in a campus but due to economic difficulties I abandoned the course. [...] I wanted to study but due to family problems and other commitments it didn't materialize until some of those issues were solved. This is a new course, the syllabus and mode of delivery looked attractive so I felt this was good for me [...] We are given more help. There is a similar course at [redacted] university. They use Moodle and everything is online; no other help is given. On the other hand it is very expensive too. When comparing all that [redacted] is far ahead and that is the main reason for me to select this course.

මම මුලින් කැම්පස් එකක හිටියා නමුත් ආර්ථික ප්‍රශ්නත් එක්ක මම ඒක අතහැරලා දාලා ආවා. [...] ඉගෙනගන්න ඕන කියන එක හිතේ තිබුණා ඒත් පවුල් ප්‍රශ්නයි ඒකයි මේකයි නිසා ඒක යට ගිහිල්ලා තිබ්ලා අවසානෙදි ඉතිං සමහර සමහර දේවල් විසඳිලා ගියාට පස්සෙ මේක අලුතෙන් පටන් ගත්තෙ, සිලබස් එක, ක්‍රමයත් බලද්දි මේක හොඳයි කියලා හිතුණා.[...]
අපිට දෙන ආධාර වුනත් ටිකක් වැඩියි. මේ වගේ එකක් තියෙනවා [redacted] කැම්පස් එකේ. ඒකෙ ඒගොල්ල කෙලින්ම Moodle එක හරහා ඔන්ලයින්ම කරන එකක් වෙන කිසිම ආධාරකයක් සපයන්නෙ නෑ. එක පැත්තකින් ඒකෙ ගණනත් වැඩියි. ඒගොල්ලො ඉගෙන ගන්න ගිණයින් වෙනුවෙන් කරන ආධාර උපකාරත් අඩුයි. එතකොට ඒකත් එක්ක බලද්දි [redacted] එකේ ගොඩක් ඉස්සරහින් ඉන්නවා. ඒක නිසා තමයි වැඩිපුරම තේරගන්න හේතුව.

Box 9-48: Bandula-29Y-M-Hambantota

I got selected to do Bio Science at the Colombo university. While following it, I got selected to [...] bank. Then I discontinued that course at Colombo campus. Once I joined the bank, I got to know of this course at [redacted] and that the course and the university were well recognized. If I managed to complete the degree while continuing the job I would also stand a good chance of getting a promotion.

මම සිලෙක්ට් වුනේ කොළඹ කැම්පස් එකේ බයො සයන්ස් වලට. මම ඒකෙ ඩිප්ට් එක කර කර ඉන්න අතරෙ තමයි මම [...] බැංකුත් එකට සිලෙක්ට් වුණේ. ඒක හින්දා මම කලමිටු කැම්පස් එකේ කෝස් එක නැවැත්තුවා. [...] බැංකුත් එකට ජොයින් වුණාම මට දැනගන්න ලැබුණා [redacted] එකේ මෙහෙම කෝස් එකක් තියනවා, ඒකට තත්ත්වයක් තියනවා, හොඳ පිළිගත්තු විශ්ව විද්‍යාලයක් කියලා. ඒක හින්දා අර ජොබ් එකත් එක්ක මට ඩිප්ට් එක කරගන්න පුළුවන් වුනොත් මට ප්‍රමෝෂණ වලටත් යන්නත් පුළුවන්

Box 9-49: Daham-23Y-M-Matara

Lasith on the other hand had completed an IT diploma in 2003, but had not studied further to complete his degree. Recognizing the importance of a degree, now he is following the ICT programme at the YFU and he too acknowledged the affordability of the ICT programmes.

After finishing A/L, I did the IIT [Informatics Institute of Technology] diploma course. That was in 2002/2003 and there were not many private degrees on offer those days. So I thought a diploma would be more than enough and neglected completing the degree. Now that I am working, I can't give up my job [...] Even if we go to a private institute like ICBT [International College of Business and Technology] we will have to pay a considerable amount. But the [redacted] course is much more economical and it allows us to work while studying.

ආල්ටර් A/L s මම I IT එකේ කෝස් එක කලාට පස්සෙ. මට ඒ දවස්වල තිබුණෙ නෑ මම කෝස් එක කලේ 2002/ 2003 වගේ. ඒකයි මම ඩිප්ලෝමා එක කලේ. ඒ කාලෙ තිබුණෙ නෑ ගොඩක් ප්‍රයිවේට් ඩිප්ට් ඔෆර් කලා හරි අඩුයි නෙ. මම හිතුවෙ ඩිප්ලෝමා එකක් තියනම් මෝදැන් ඉනල් කියලා. ඒ නිසා මට පොඩ්ඩක් මග ඇරුණ ඩිප්ට් එක කම්ප්ලීට් කරන එක. නමුත් මම දැන් වරක් කරන නිසා මට ජොබ් එක අතහැරන්නත් බැහැ [...] ප්‍රයිවේට් ගියත් අපි ICBT වගේ තියනවා ඒත් අපට ලොකු ගණනක් ගෙවන්න වෙනවා. නමුත් [redacted] එකේ ධජ්ඵ එකක් ගොඩක් හොඳ නිසා ඇත්තෙන්ම අපට වරක් කරන ගමන් වැඩ කරන්න පුළුවන්

Box 9-50: Lasith-27Y-M-Kalutara

One respondent had selected the ICT programme especially because it had an arrangement with the Sri Lanka Association of Software and Services Companies (SLASSCOM) to provide industrial placements for students completing the programme. Many of these industrial placements could be converted to employment opportunities. Therefore, for Roshan it was an important determinant in selecting this programme.

This particular program is mainly aimed for people who want to be Software Engineers plus they have an agreement with SLASSCOM, Sri Lanka Software Developers Association or something like that. I am not sure what it stands for.

Box 9-51: Roshan-24Y-M-Colombo

9.4.1.4 Summary

Flexibility and the affordability of programmes were important determinants in selecting YFU programmes. The guaranteed industrial placement opportunity in the ICT programme was also seen as an important reason. Many students in YFU programmes were denied access to state university education due to the lack of places, but there were also students who were on their second attempt to gain a HE.

The next section explores the readiness of learners with respect to skills, motivation and resources (here resources are the physical availability of computers with access to the Internet)

9.4.2 Readiness of the Learners

3.
 - f. How well are they prepared for these programmes with respect to skills, motivation and resources?

9.4.2.1 Skills

Self Study

Self-study skills are essential in a DE programme because most of the time learner engages with course materials on their own. As none of the programmes were conducted fully online or fully in distance mode at YFU, students were able to receive guidance from their lecturers (Box 9-52).

Face-to-face sessions must be there! If we have course coordinator's or lecturer's help and do it that way we can gather more knowledge	ලේස් වූ ලේස් සෙසන්ස් තියෙනවා ඕන! දැන් අපි කෝඩිනේටර් හරි ලෙක්චර් හරි කියන ඒවාත් අරගෙන ඔය දේ කලොත් ඊට වඩා නොලේස් එකක් ලබා ගන්න පුළුවන්.
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Box 9-52: Manu-23Y-M-Badulla

Conversely there were respondents who preferred self-studying and found these “day-schools” a burden (Box 9-53).

I mean we have some “day-schools” pretty much like a lecture to sort out our problems or difficulties. But I would suggest to cutting that out.

Box 9-53: Roshan-24Y-M-Colombo

Time Management

Time management is an important skill for a distance learner because most of the time they are committed to other activities such as employment whilst continuing their studies on a part-time basis. For example, Bandula commented that the greatest issue for him was the non availability of time (Box 9-54).

The greatest issue is the non availability of time	ලොකුම ගැටළුව කාලය පිළිබඳ ගැටළුව තමයි.
--	---------------------------------------

Box 9-54: Bandula-29Y-M-Hambantota

However, the skill of effective time management can be difficult to build without help and advice from a mentor; for example, Kamani has had problems with meeting deadlines for submission of assignments. She therefore felt that some guidance was necessary for students on improving time management skills (Box 9-55). She also identified learning skills to be of great importance. In fact, as discussed in Chapter 3, in a KE, generic learning skills acquired through education are invaluable (Castells 2000a; Dahlman and Utz 2005).

Time management is very important in a distance learning programme. [...] We don't really get the online concept the concept of [studying] online isn't really applicable to us. As for me, when I submit one assignment there is another that I have to work on. Sometimes [...] I find it difficult to handle assignments. I think it will be good if there is a special session or class on how to handle assignments to help us develop the learning skills. What is more important here is the learning skill. Materials of course we can find from somewhere but it is difficult to improve the skill.	ඩිස්ටන්ස් ලේනිං ප්‍රොග්‍රෑම් එකකදි ගොඩක්ම වයිම් මැනේජ්මන්ට් අවශ්‍ය වෙනවානෙ. [...] අපිට ගොඩක්ම ඔන්ලයින් තියන කන්සෙප්ට් එක එච්චරම එන්නෙ නැහැ. මට වගේ නම් අසයින්නේ එකක් ඉවර වෙද්දි තව එකක් පටන් ගන්නවා. මට සමහර වෙලාවට [...] අසයින්නේ හැන්ඩල් කරගන්න බැරිකමක් තියෙනවා. අසයින්නේ හැන්ඩල් කරගන්න විදිය ගැන ස්පෙෂල් සෙසන් එකක් හරි ක්ලාස් එකක් හරි දිලා ලේනිං ස්කිල්ස් ඩිවෙලොප් කරනවා නම්, කියලා දෙනවානම් හොඳයි කියලා හිතනවා. මෙකනදි වැඩියම අවශ්‍ය ලේනිං ස්කිල් එක අර මැටීරියල්ස් වගේ නම් අපට හොයාගන්න පුළුවන්. ලේනිං ස්කිල් එක දියුණු කරගන්න අමාරුයි
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Box 9-55: Kamani-28Y-F-Gampaha

English Language

Some respondents registered in YFU courses experienced problems due to their poor English ability. Discussion thus far has shown that most of the students who were weak in English came from rural areas. According to Bandula, it was mostly when one searched for knowledge that language became a barrier (Box 9-56). However, as the contemporary labour market greatly values the gathering, filtering and assimilation of knowledge from a wide variety of sources, the lack of English language ability is also likely to hinder one's employment prospect.

When we are recalling our knowledge there is not much of a problem. But when we go in search of knowledge the language problem arises because much of the knowledge is documented in English.	අපිට තියන දැනීම ගන්නකොට ඒක ඒව්වර ගැටළුවක් නෑ. අපි දැනුම් හොයා ගෙන යනකොට භාෂාව පිළිබඳ ගැටළුව එනවා. මොකද බොහෝ දැනුම් සම්භාරයක් එකතු වෙලා තියෙන්නේ ඉංග්‍රීසි භාෂාව සමග නිසා.
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Box 9-56: Bandula-29Y-M-Hambantota

By being aware of their problem, respondents were effectively addressing it. For example, there were 12 students attending private tuition classes, especially for grammar and spoken English.

Computer Skills

The questionnaire listed 4 tasks, and the respondents' ability to accomplish those tasks was interpreted as their computer proficiency. As can be seen from Figure 9-16, 83% of respondents were able to create and manage files and folders on their own, while only 60% were comfortable in using a search engine on their own. 9% of respondents had never used a search engine; 5% had never sent an email with an attachment.

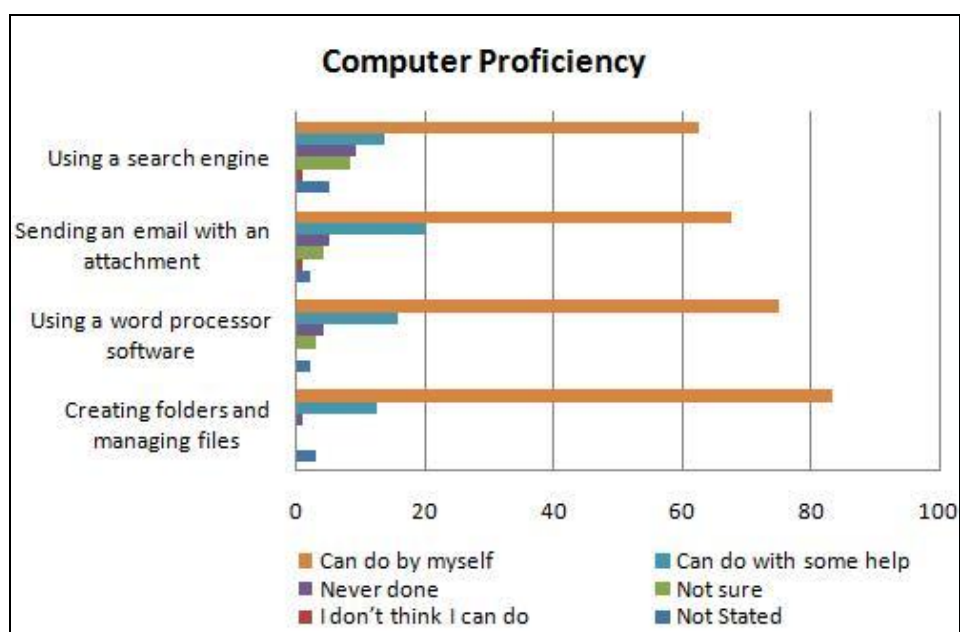


Figure 9-16: Computer Proficiency (%)

The computer skills of respondents showed a significant relationship with their ownership of computers in 3 out of the 4 tasks. Task 1 – “creating folders and managing files” did not show any significant relationship with the ownership of computers. In fact, it is a basic task that any novice computer user would learn at the very beginning. On the other hand, the ability to accomplish Task 2, 3 and 4 – “using word processor software to create a document”, “sending an email with an attachment” and “using a search engine to find degree programmes offered by the National Online Distance Education Service” showed significant relationship with ownership of computers (Table 9-15, Table 9-16, Table 9-17).

Table 9-15: Using Word Processor and Computer Ownership - Statistical Information

	Able to do alone	Unable to do alone	
Owns a computer	56	9	65
Does not own a computer	15	13	28
	71	22	93
Chi-square value	11.5		
p value	0.001		

As can be seen from Table 9-15, by applying the Chi-squared test the two-tailed p value obtained was 0.001. Hence the relationship between the ownership of computers and the ability to use word processor software to create a document was statistically significant (at 1% level).

Table 9-16: Sending Email with Attachment and Computer Ownership - Statistical Information

	Able to do alone	Unable to do alone	
Owns a computer	51	14	65
Does not own a computer	13	15	28
	64	29	93
Chi-square value	9.36		
p value	0.002		

In Table 9-16, the two-tailed p value obtained after applying the Chi-squared test was 0.002. Therefore, the relationship between owning a computer and the ability to send an email with attachments was also statistically significant, at 1% level.

Table 9-17: Using a Search Engine and Computer Ownership - Statistical Information

	Able to do alone	Unable to do alone	
Owns a computer	47	16	63
Does not own a computer	12	15	27
	59	31	90
Chi-square value	7.61		
p value	0.006		

As can be seen from Table 9-17, by applying the Chi-square test the two-tailed p value obtained was 0.006 showing that the relationship between the ownership of computers and the ability to use a search engine was again statistically significant, at the level of 1%. This result is also illustrated in Figure 9-17.

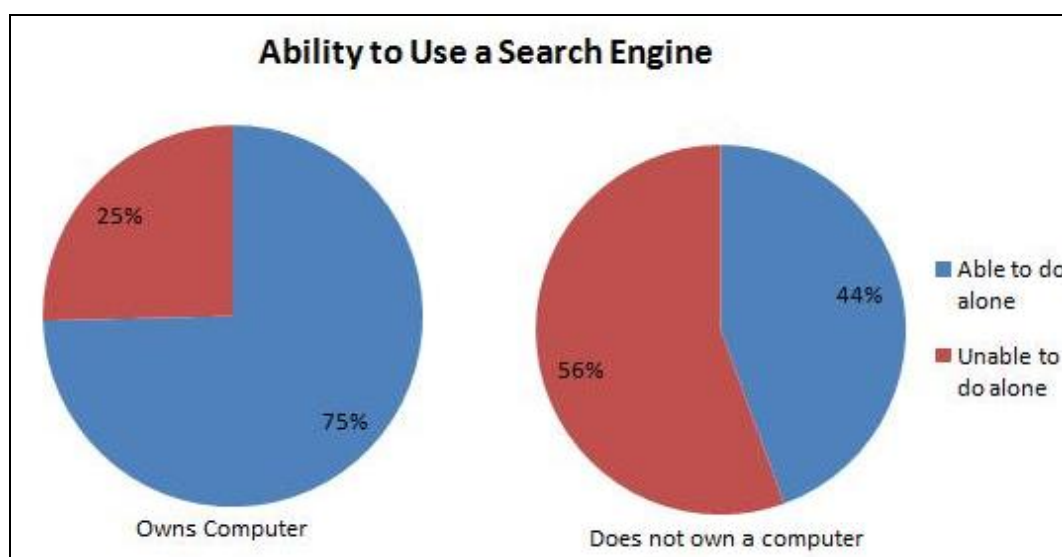


Figure 9-17: Ability to Use a Search Engine and Computer Ownership

This result can be linked to van Dijk's (2005) observation that usage differs according to possession of resources. It is likely that respondents who owned computers had more time to practice working on them, thus mastering the required skills, while respondents who were using shared facilities were restricted by the availability of resources, thus hindering their potential to improve their skills. In fact, this is highly likely to be the case because some respondents have commented that searching the Internet consumed a considerable amount of time (Table 9-18).

Table 9-18: Difficulties in Searching Internet

- When trying to find answers to questions there are so many results. Thus it is more time consuming to filter out and read necessary stuff.
- When using internet and finding information there are lot of unwanted information present than required information

Conole, de Laat et al. (2006) have also reported that some students felt that too much information on the web was a disadvantage due to the time taken to filter the required information. However, the students they interviewed had Internet connectivity, thus were likely to be more familiar with searching the Internet. In the case of YFU students there are a number of potential reasons for the increased time spent on searching:

1. Students not having Internet connectivity at home, thus not much experience in searching
2. Low Internet connection quality taking unnecessarily long time for page content to be loaded up

3. The lack of English language knowledge requiring more time and effort to understand and filter search results

When there is only a limited time allocated, there is pressure to finish all work with the computer within that time. On the other hand, if home Internet access is available, a student can use the facility for longer and improve the skill of searching filtering and assimilating information – thus effectively reducing future information searching time.

However, it is also worth noting here a different type of a comment made by one respondent.

“I have facilities but don’t know how to use.”

This respondent was a 25 year-old female teacher from Badulla, possibly teaching in a school with computer facilities, but lacking skills to make use of the available physical resources. This appears to follow Warschauer’s (2003) view, who argued that the minimally invasive learning was not successful unless special educational aid was available.

Dr Gunadasa observed that the level of computer skills of the successive cohorts of students had improved over the years (Box 9-57).

With respect to skills, what I found was [...] now things are improved. That means right at the beginning most of the people did not know how to use a computer to do these things. But last year there was a remarkable improvement and about I think about may be 40% had computers at their home [...] That is with respect to resources. There when I do the workshop also I see, long time ago they did not know how to setup an email account. But last time only out of 25 only one or two people didn’t know how to do it. Their literacy and that part is improving so there is no problem.

Box 9-57: Dr Gunadasa-Senior Lecturer

On the other hand, another lecturer observed a significant dropout rate in ICT-enhanced DE programmes and doubted whether this was due to students’ lack of knowledge and experience with technology.

[T]here is a significant dropout [students abandoning programme] rate. So I don’t know how much of it can be attributed to their difficulty of using the technology [...] [T]here were 5 categories [referring to a questionnaire he had distributed among his students] depending on their knowledge and experience with technology. You always end up with students being there for the first three or the top three categories. Almost nobody with no real experience with computers that remain with the course, if there were any. They have invariably dropped out. That is always the problem. When we do questionnaires it is always the students who are active and who are remaining that participate.

Box 9-58: Mr Ran-Lecturer

The self-reported level of computer skills varied amongst the respondents. The instrument used in this research listed 4 tasks and asked whether a respondent could accomplish them on their own, with some help, had never tried them before, not sure whether they could or whether they thought they could not. With this range of possibilities, it is likely that respondents were able to represent their actual level in the questionnaire.

9.4.2.2 Motivation

Motivation is an essential quality for success in DE. The respondents who gained access to HE on their second attempt (Daham, Bandula and Lasith), because they were unable to complete the previously attempted course, were highly motivated to complete the course. Respondents who longed for a HE but were unable to secure places in the conventional university system (such as Maneesha) were also equally motivated.

Lecturers have observed that some of their students lacked motivation to engage with the LMS and benefit from it. For example, Mr Ran described his efforts to motivate students to use Moodle™ (Box 9-59).

Maybe because of the cultural and past educational pattern there is reluctance to be active right at the beginning. Generally you have to put something to force them to come online. Either a compulsory activity or an activity where they can get extra marks [...] But our usual experience is once they start, they become very enthusiastic and almost addictive to it. You have to put things there that will attract the students. [...] So generally at the first day-school itself right at the beginning of activities we emphasize that [...] there are lot of things for them to gain by coming online. So that doesn't work all the time than you have to give some incentive.

Box 9-59: Mr Ran-Lecturer

Another lecturer had also observed that unless an incentive was offered students were reluctant to use the online system. His efforts to get students involved in a supplementary course had failed the previous year, and he was planning to offer his module with a compulsory online component the next time (Box 9-60).

[I]t is the adventurous people I think went first. Because this is new and it was kind of non compulsory so definitely only the adventurous people will do, so I observed that. And the good ones, the ones who got "A"s they tried it. In a sense they were the motivated ones to do this and the adventurous ones. The others, the average ones no they didn't take part. [...] [W]e are motivating them by making it compulsory. Because that was one of the lessons we learned, if you don't motivate them sufficiently I think they take the least resistance path.

Box 9-60: Dr Gunadasa-Senior Lecturer

However, this effort to get more students engaged through the introduction of compulsory online components was not welcomed by students. Instead, students thought that they should be allowed the freedom to select the media with which they wanted to work (Box 9-61).

<p>I think making things compulsory is not the solution. People have different ways that suit them. If one needs to listen to the lecturer in order to understand well, may be in a 'day school', his/her medium is audio. Likewise there are others who remember/understand by seeing things [visual] ;or may be by using things, for example by writing a short-note while studying [...] Therefore, while providing these facilities, freedom should also be there for a person to make use of what one fancies – well that is my view.</p>	<p>අනිවාර්ය කරන එක නම් හොඳ නැහැ කියලයි මට හිතෙන්නෙ. මොකද එක එක්කෙනාගෙ මේඩියාස් වෙනස්. [...] ක්ලාස් රූමි එකකදි 'ඩේ ස්කූල්' එකකදි වුනත් ලෙක්චරර් කියන දේ හොඳට වැදෙනවා නම් ඒක තමයි එයාගෙ මේඩියා එක. ඒ කියන්නෙ අහලා. සමහරක් අයගේ මේඩියා එක දැකලා, යම් දෙයක් දැකලා. සමහරක් අයගෙ කියෙනවා යුස් කරලා. ඒ කියන්නෙ අපි අතින් ඤේච් තෝච් එකක් ගැහුවොත්. [...] ඒක හන්දා නිදහස දෙන්න ඕන මේ වගේ ගැයිලිච්ස් දෙන අතරෙ ඒගොල්ලන්ට අවශ්‍ය ඕන දේ යුස් කරන්න ඒගොල්ලන්ට අවස්ථාව දෙන්න ඕන කියලයි මම හිතන්නෙ.</p>
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Box 9-61: Daham-23Y-M-Matara

However, it is also worth noting that this particular student had never tried logging on to the system.

<p>Even though I said I used ICTs, I never connected online. [...] I mean I was not that much aware of it. There was a notification that it was available. But I thought it was enough to follow the course materials and download the notes I didn't have from the [redacted] site.</p>	<p>ඇත්තටම අයි.සී.ටී. යුස් කළා කිව්වට මම ඔන්ලයින් නම් කනෙක්ච් උනේ නැහැ. [...] මම ඒ කියන්නේ ඒවා ගැන ඒ කරම් දැනුවත්ව තිබ්බෙන් නෑ ඒ වෙනකොට එහෙම දෙයක් කියනවයි කියලා දැන්නුවා. ඒත් මට කෝස් මැටීරියල් එක ෆොලෝ කරලා මට නැති තෝච්ස් ටික [redacted] සයිට් එකෙන් ඩවුන්ලෝඩ් කරගත්තම ඇතිය කියලා මට හිතුණා.</p>
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Box 9-62: Daham-23Y-M-Matara

This shows that unless compulsory, some students would not be motivated to be actively involved in online activities. However, making online activities compulsory could affect learners who have difficulties in accessing, understanding or using the online system. Some lecturers feared that introducing such compulsory components would discriminate against rural students (Box 9-63).

<p>With a normal student [a student registered in an undergraduate programme other than ICT] that is why we can't make it [online activities] a compulsory component. If we make it compulsory we will then be discriminating against the students living away from the metropolitan areas.</p>
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Box 9-63: Mr Ran-Lecturer

He further stated that even though the designated “virtual office hour” chat sessions were disappointing, students initiated spontaneous chat sessions asking questions about course materials when he was online at about 10.00 pm at night.

I have had couple of informal chat sessions which spontaneously came about just when I was online and as the students too were online and sending them a message. That worked wonderfully well. That happens usually at 10.00 O' clock 11.00 O' clock in the night. But then again there is a problem because you can't include students who have to go out of their homes to access internet.

Box 9-64: Mr Ran-Lecturer

Unless a student has home Internet access s/he is unlikely to be in a chat session at that time; this demonstrates the advantage of home Internet connectivity as well as the lack of opportunity for those who do not have connectivity at home (Box 9-64).

9.4.2.3 Resources

Ownership of Computers and Printers

There were 7 student interview participants (out of 10) who owned computers while others depended on the computer lab facility at YFU and felt that buying and maintaining a computer was not affordable.

Figure 9-18 shows that 68% of the questionnaire respondents owned computers. Considering the computer ownership of the country (11.4%) this is a significant figure. As can be seen from Table 9-19 and Table 9-20, respondents from Colombo or even the Western Province were much more likely to own computers than their counterparts elsewhere. Applying the Chi-square tests, these were found to be statistically significant at 1% level.

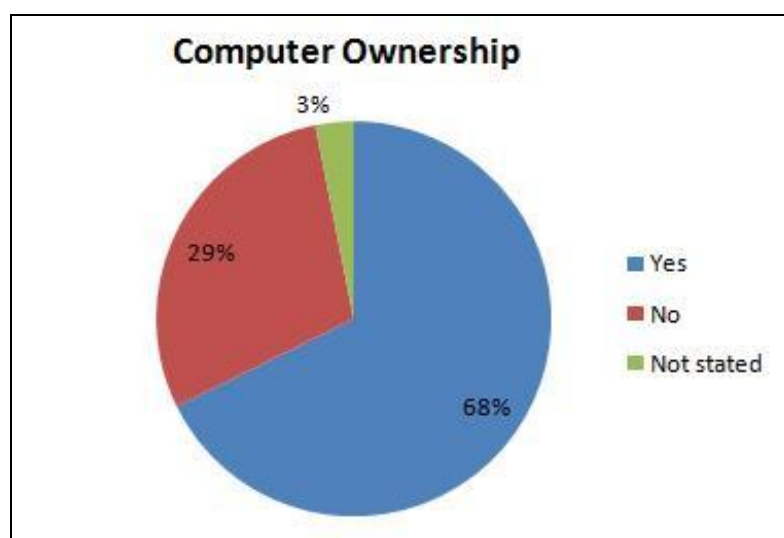


Figure 9-18: Computer Ownership

Table 9-19: Computer Ownership and Colombo Residency

	Owens a computer	Does not own a computer	
Students from Colombo	19	1*	20
Others	45	27	72
	64	28	92
Chi-square value	7.81		
p value	0.005		

*Fisher's exact test was also performed on the data set as there was a small cell value and it too gave the same results as the Chi-square test. This is not surprising as the expected value for each cell was >5

Table 9-20: Computer Ownership and Western Province Residency

	Owens a computer	Does not own a computer	
Students from Western Province	42	8	50
Others	22	20	42
	64	28	92
Chi-square value	10.8		
p value	0.001		

In Sri Lanka computer ownership is mainly the prerogative of urban dwellers. For example, in 2009 when the computer ownership in the country as a whole was only 11.4%, 23.6% of urban households had computers; computer ownership in the Western province stood at 19% (Department of Census and Statistics Sri Lanka 2009a) - see Appendix - T for other statistics.

Table 9-21 shows that all ICT students owned computers, but only 45% of the science students did. This is hardly surprising because ICT students were engaged in a software engineering degree and were more likely to own their own computers. The majority of engineering students and technology students, too, owned computers.

Table 9-21: Computer Ownership (programme-wise)

Programme	Computer Ownership	Computer Ownership (%)
ICT	5	100
Not Stated	6	86
Engineering	15	83
Technology	25	78
Science	14	45

As can be seen from Figure 9-19, 40% of the respondents owned both a computer and a printer. YFU students confirmed that printing material was very costly for them (Box 9-65). As YFU provided printed course materials, not many complained of printing costs.

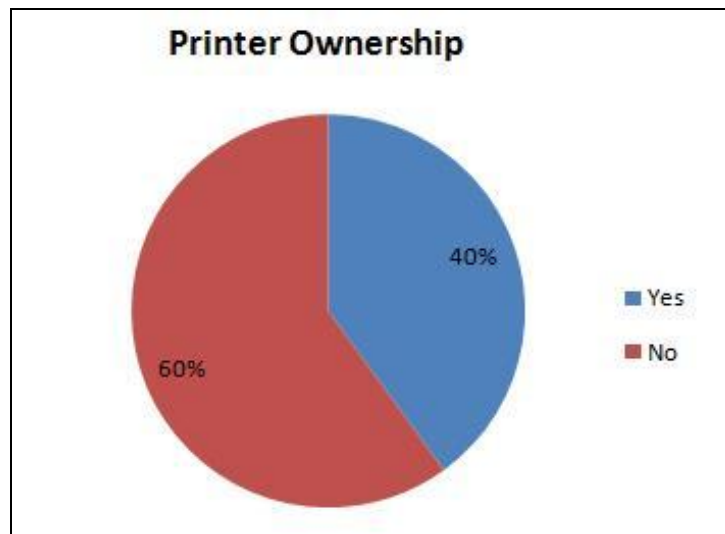


Figure 9-19: Printer Ownership

<p>It is very costly if one tries to take printouts. That is because there is so much to take. [...] I do take printouts of some [material] that I feel are essential, but even then, only a limited number. I mean about 4 to 5 pages maximum. Otherwise I would convert it to a short-note and then take a printout of that.</p>	<p>ප්‍රින්ට් අවුට්ස් ගන්න ගියොත් මාර කොස්ට් එකක් යනවා. මේ ලොස්ට් එක වැඩි නිසා. [...] සමහර ඒවා තියෙනවා මම ප්‍රින්ට් අවුට්ස් ගන්න. ගොඩක්ම අවශ්‍යයි කියලා තිබෙන ලිමිටඩ් ප්‍රමාණ. ඒ කියන්නේ පේජස් 4ක් 5ක් මැක්සිමම් තියෙන්න. එහෙම නැත්නම් මම ෂෝට් නෝට් එකක් විදියට කන්වර්ට් කරලා ඒකෙ ප්‍රින්ට් අවුට් ගන්නවා.</p>
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Box 9-65: Kamani-28Y-F-Gampaha

Opportunity to Use Computers

Figure 9-20 shows that the majority of respondents (82%) believed that buying and maintaining a computer at home was expensive and this is in accordance with the survey findings by the PANdora network (Jamtsho, Rinchen et al. 2010b). As can be seen from Figure 9-21, 40% of the respondents used computers daily, with 83% using computers at least once a week. However, there was one student who had never used a computer and another one who did not want to use a computer. This can be mapped to van Dijk's (2005) identification of "want-nots" – people who do not want to use computers or the Internet. Both these respondents were registered on the Science programme; their demographic details revealed that both of them were 24 year-old females (one from Matara, one from Galle). The respondent who had never used a computer was a teacher. This finding was disturbing

because a teacher who has never used a computer is unlikely to encourage his/her students to use them.

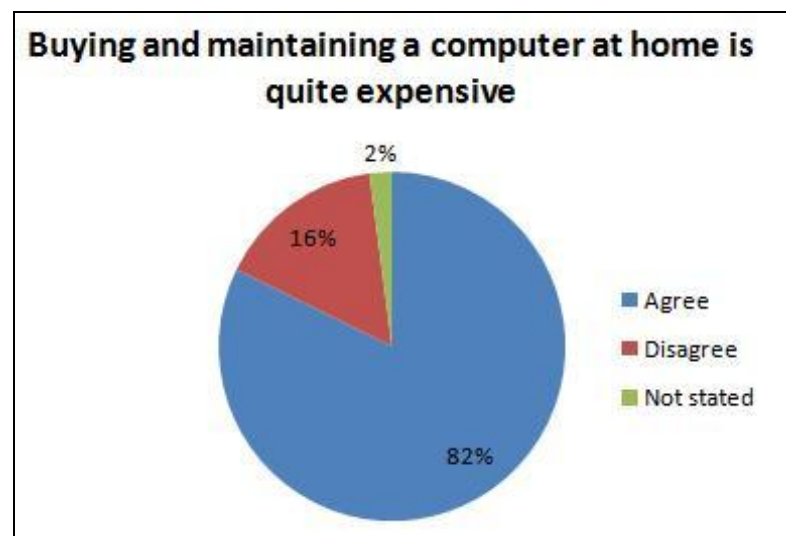


Figure 9-20: Maintaining a Computer at Home

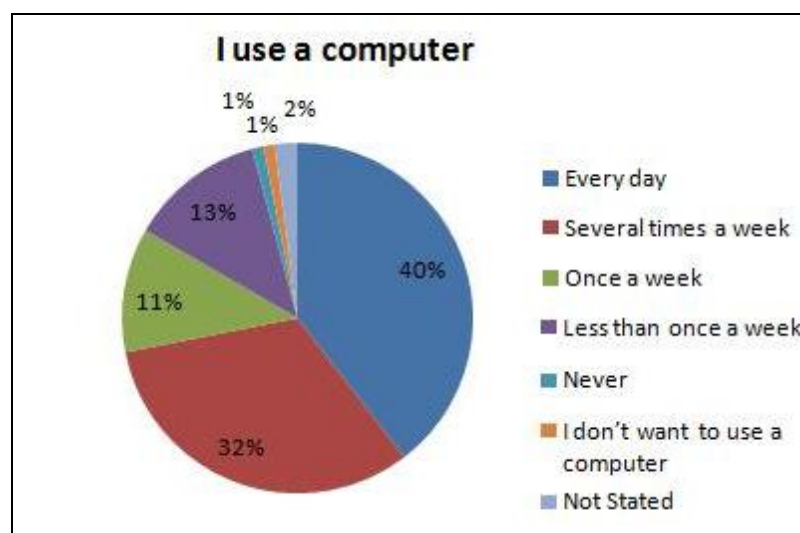


Figure 9-21: Frequency of Computer Use

When computer usage was categorized as ‘often’ (more than once a week use) and ‘less often’ (combining other options), there was a significant difference (p value 0.02) in computer use according to gender – males used computers more often than females (Table 9-22). However, no significant difference was observed in computer ownership between genders, making it difficult to interpret this result. It could be because females were more occupied with other activities and had little time to devote to using computers, or visiting NACs. As the time students spent on the computer was not observed, it could also be that females used computers less often because they travelled to NACs less often, but in fact used

the computers for longer periods of time on the days that they visited. It is also worth mentioning here that no difference was observed in computer skills between genders.

Table 9-22: Computer Usage and Gender

	Often	Less often	
Male	35	17	52
Female	18	23	41
	53	40	93
Chi-square value	5.123		
p value	0.02		

Figure 9-22 shows that 36% of respondents believed that it was not essential to have access to a computer for learning purposes, but the majority did believe that it was necessary.

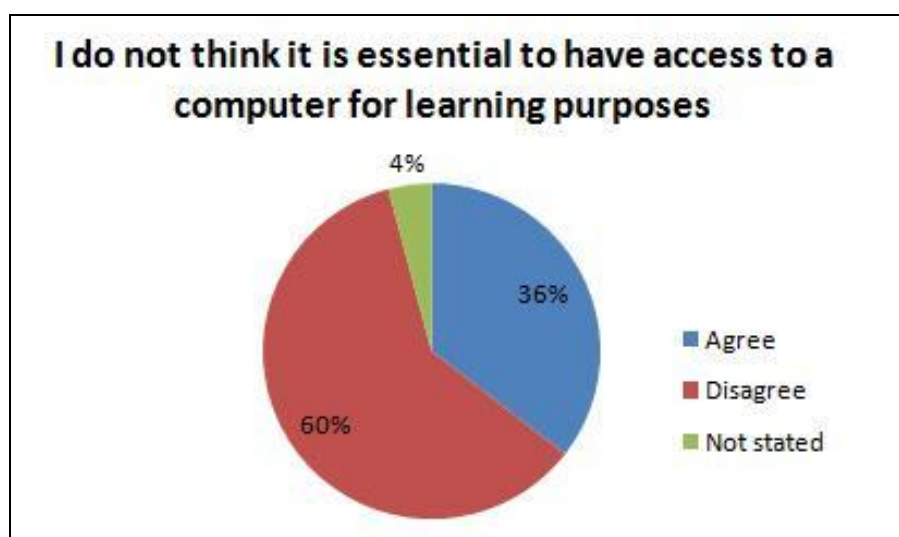


Figure 9-22: Not Essential to Have Access to a Computer for Learning

Connectivity to the Internet

Only 5 student interview participants (out of 7 who owned computers) had broadband Internet connectivity while another participant (who owned a computer) used a mobile phone to access the Internet using GPRS. Other participants used the YFU's computer lab facilities to access the Internet and none of them used NAC facilities due to various difficulties (discussed later in the chapter). One interview participant from Kandy travelled to a regional centre, via two bus rides which took at least 45 minutes (one-way), to access the Internet.

As can be seen from Figure 9-23, half of the questionnaire respondents accessed the Internet from the educational institute and only 45% had home Internet connectivity. Nearly 35% of

the respondents used the Internet facility from a library or public access point while a quarter of respondents used Internet-cafes.

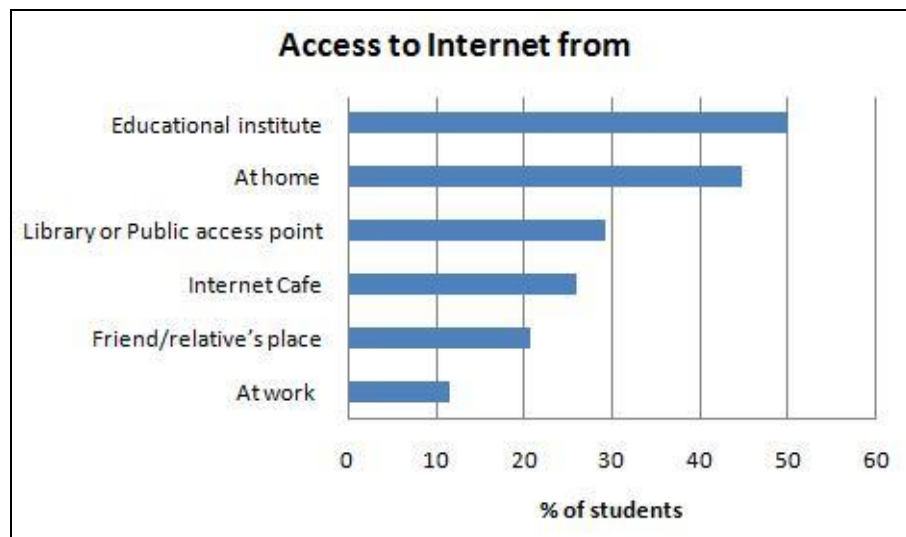


Figure 9-23: Access to the Internet

The researcher's previous work (Liyanagunawardena 2008) revealed how students who owned computers but did not possess Internet connectivity overcame the barrier by downloading course materials and saving recommended web resources page by page to be accessed from home, while students who did not own computers downloaded and printed them. As printing is expensive, one would have to choose the important sections of content to be printed. Alternatively as Kamani (Box 9-65) has argued, one could convert the content into a short-note for printing, requiring a trade-off between time spent on non-personal computers (which time might cost money or have an overall limit) and the cost of printing.

Figure 9-24 shows the frequency of Internet access, which varied widely among respondents. 26% of respondents accessed the Internet daily while 29% accessed it several times a week. 7% of the students either never accessed the Internet or did not want to access it. This was disturbing as the Internet has become one of the main sources of information in contemporary society and discarding the Internet altogether could mean lost opportunities.

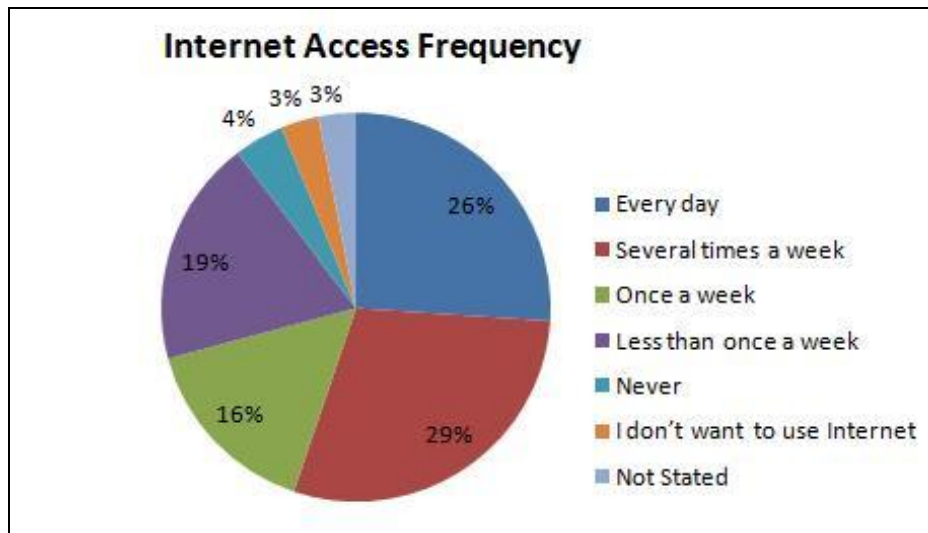


Figure 9-24: Internet Access Frequency

As can be seen from Figure 9-25, 63% of the home Internet connections were broadband, either ADSL or 3G mobile broadband. 13% were dial-up and nearly a quarter were connected through GPRS. Figure 9-26 depicts home connectivity according to their locations. 69% of home connectivity in Colombo was broadband while it was 59% in other parts of the country. However, it is worth noting that 80% of Colombo respondents enjoyed home Internet connectivity while only 49% of those living outside Colombo did, illustrating the stark contrast of facility/resource distribution within the country.

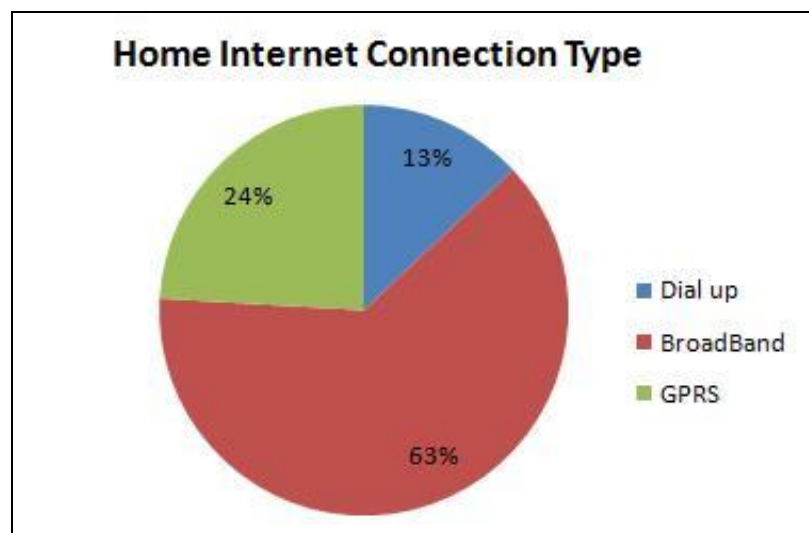


Figure 9-25: Home Internet Connection Type

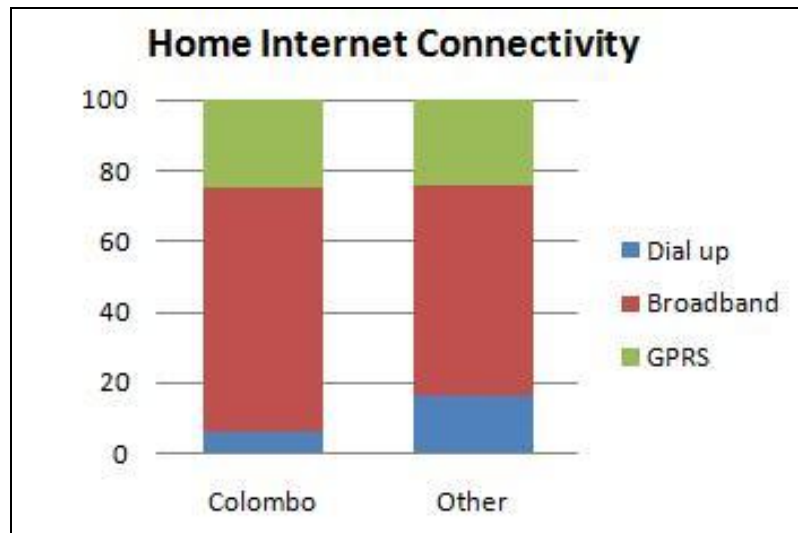


Figure 9-26: Home Internet Connection Type and Location

As shown in Figure 9-27, the vast majority of respondents (89%) agreed that maintaining an Internet connection for a home computer was expensive. This is slightly higher than the number that agreed (82%) that it was expensive to buy and maintain a computer at home.

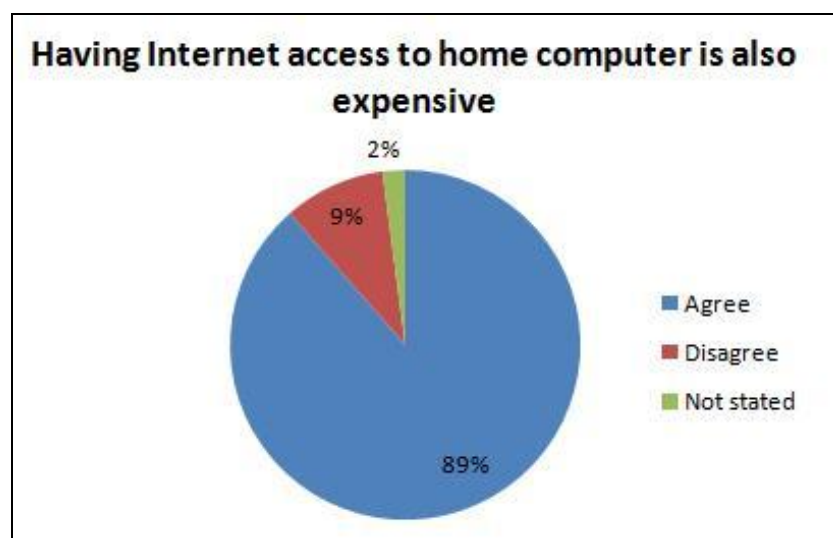


Figure 9-27: Maintaining Internet Access at Home

Figure 9-28 shows that 37% of respondents agreed that it was not essential to have access to the Internet for learning.

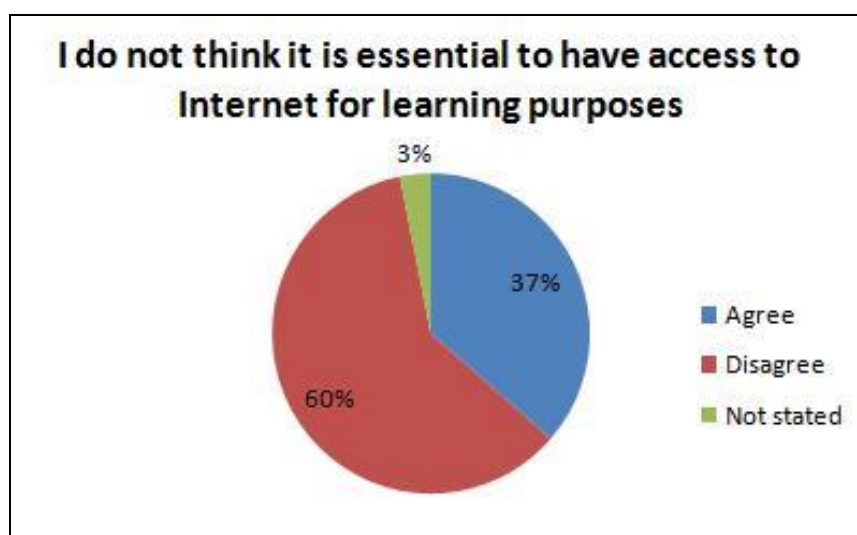


Figure 9-28: Not Essential to Have Access to the Internet for Learning

Software

None of the respondents had issues with accessing software required for their studies. However, during the group interview it was revealed that respondents were not using the NAC facility at the YFU main campus premises because it did not have some of the software installed. As there were other YFU computer labs on the same premises, students were happy to use these facilities.

9.4.2.4 Summary

Self-study skills were important for YFU students but they received a reasonable amount of academic support through face-to-face sessions. Many students who identified their English skills as poor, were attending private tuition classes. Computer skills varied widely among YFU students. Students who owned computers were significantly better in accomplishing the three “advanced” tasks of using word processor software, sending an email with an attachment and using a search engine. All interview participants were highly motivated. Having failed to attract students to voluntary supplementary online activities, lecturers were planning to introduce compulsory versions.

Computer ownership was high among YFU students compared to the national average, although it varied widely with the programme of study. Students from Colombo or the Western Province owned a significantly higher number of computers than students from elsewhere. Many students used computers at least once a week, but there was a considerable

number of students who could be classed as ‘rare’ users or ‘non-users’; male students used computers more frequently than their female counterparts (but no study of total time spent on the computer was made). Connectivity to the Internet was mainly through YFU computer facilities. Only about half of the students had home Internet connectivity. Most of the home Internet connections were broadband; but nearly a quarter of homes depended on GPRS. More than a quarter of students were either rare or non Internet users. A large majority of students believed that maintaining an Internet connection to a home computer was expensive.

9.4.3 Characteristics of Students

This section examines the characteristics of YFU students in order to address the question:

3.
 - f. What are the characteristics of students who have gained ‘access’ to HE by this initiative [introduction of the ICT-enabled programmes]?

The researcher only had access to demographic records for the ICT programme. Thus the discussion here observes the characteristics of the ICT programme’s student population (referred to hereafter as the ICT population) and questionnaire respondents (a mix of students from all 4 programmes), to identify possible characteristics of students who have gained access to HE through the introduction of ICTs. The details from ICT programme registration and details obtained through the questionnaire are juxtaposed to obtain a better understanding. As the institution held no records of the income of students, this information is solely based on the questionnaire data.

9.4.3.1 Gender

Registration details of the 2 most recent cohorts of ICT students are as follows:

Table 9-23: ICT Population Registration Details

Cohort	Registered Students	Gender	
		Male	Female
ICT 2009	53	40	13
ICT 2010	99	73	26
	152	113	39

The ICT population’s gender statistics are presented cohort-wise in Figure 9-29. Female participation in the ICT programme was only 26%, but considering the female participation

in the Sri Lankan IT industry, which is only 21%, this shows some hope of improvement in gender equality. However, the sample consisted of 46% females.

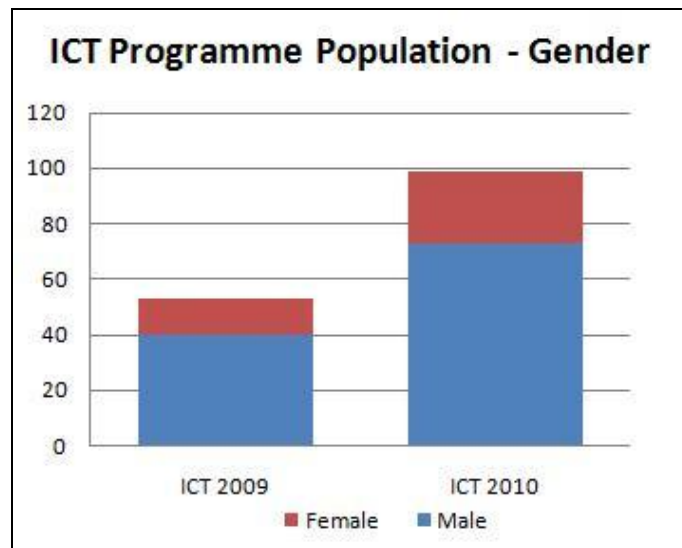


Figure 9-29: ICT Population - Gender (cohort-wise)

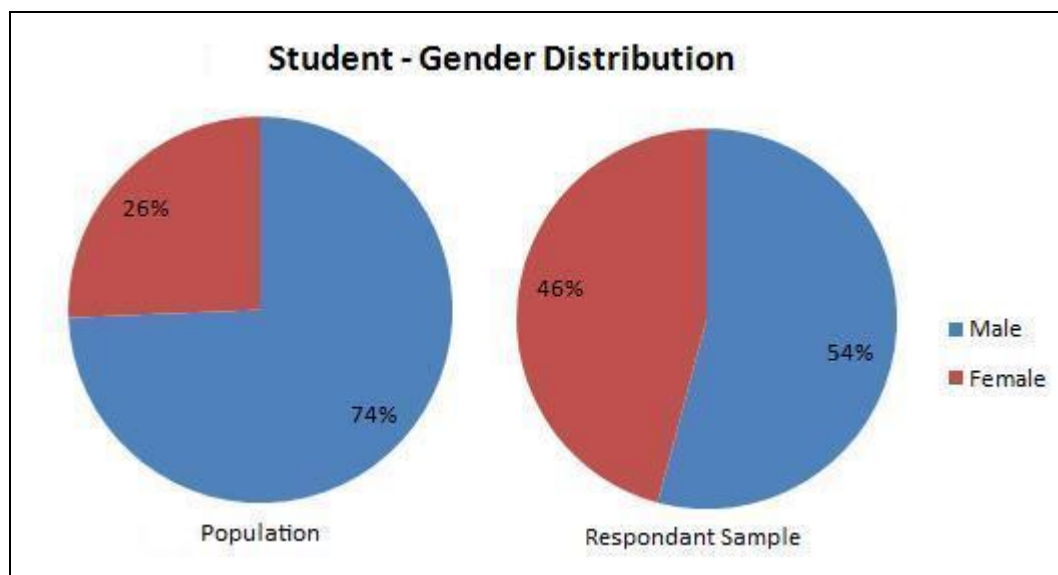


Figure 9-30: Gender Distribution ICT Population and Sample

9.4.3.2 Age

The age distribution of the ICT population is presented in Table 9-24. This showed that the majority of students were in the 26-30 age group but this was closely followed by the 20-25 age group. As can be seen from Figure 9-31, the age group 20-30 represented 72% of the total population. This programme was mainly targeted at the A/L qualified individuals who had gained other IT-related qualifications or work experience, and the age group of the majority suggested that the primary target group had been the primary group recruited.

Table 9-24: ICT Population Age (cohort-wise)

Cohort	Students according to age (at the time of registration)				
	<20	20-25	26-30	31-35	>35
ICT 2009	0	14	22	7	10
ICT 2010	0	38	36	13	12
	0	52	58	20	22

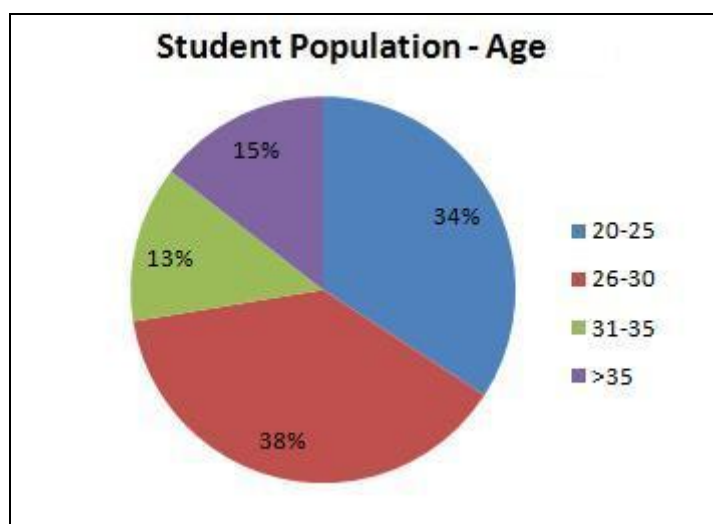
**Figure 9-31: ICT Population Age Distribution**

Figure 9-32 compares the age of the ICT population and the sample. The majority of the sample (73%), consisted of the 20-25 age group. Students for the ICT programme were actively selected by YFU, whereas entry for all other programmes is free from barriers. Since the University was actively selecting people with work experience and post A/L qualifications, it is likely that the successful candidates were older than the free entrants, thus resulting in this age difference.

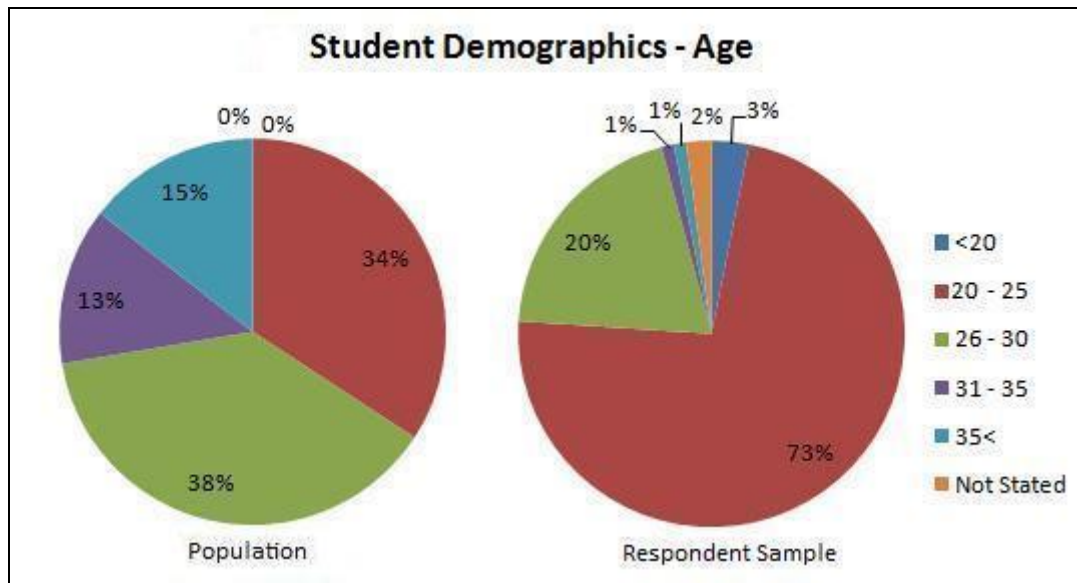


Figure 9-32: Age Distribution ICT Population and Sample

Figure 9-33 illustrates the geographic distribution according to cohorts (derived from registered study centre) of the ICT population, and it shows that there is a large majority of Colombo-based students. It is worthwhile noting the possibility that some students may have moved to Colombo in order to participate in the programmes.

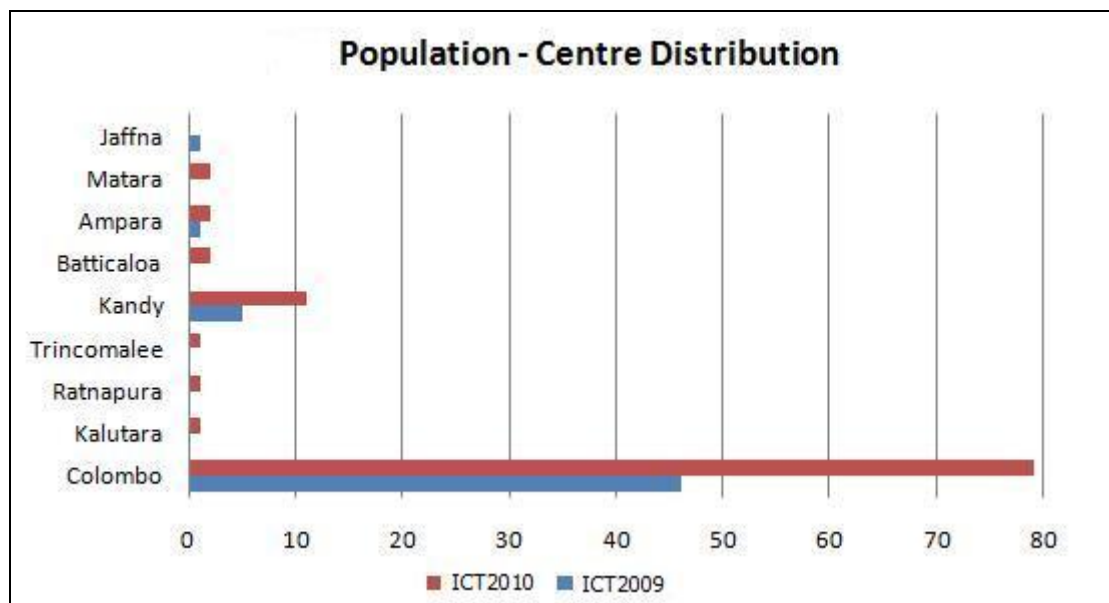


Figure 9-33: ICT Population Geographic Distribution (cohort-wise)

A comparison of the geographic distribution of the ICT population and the geographic distribution of the sample is depicted in Figure 9-34. Students from the Western Province formed the majority in both the ICT population and the sample. However, the sample had a

considerable number of students from elsewhere. There are several plausible explanations. Since the ICT programme recruited people with work experience in the IT industry it is likely that these students are working in Colombo or the Western Province, because the IT industry in Sri Lanka is mostly concentrated in these areas. Another possibility is that since the ICT programme was advertised as an “online” degree, only the people who had ready access to the Internet and computers applied, resulting in an over-representation of people from the Western Province. On the other hand, questionnaires were distributed in two locations: YFU’s main campus in Colombo and YFU’s regional centre in the Southern Province. This may have resulted in capturing more responses from regional students, especially from students of the Southern Province, in the sample.

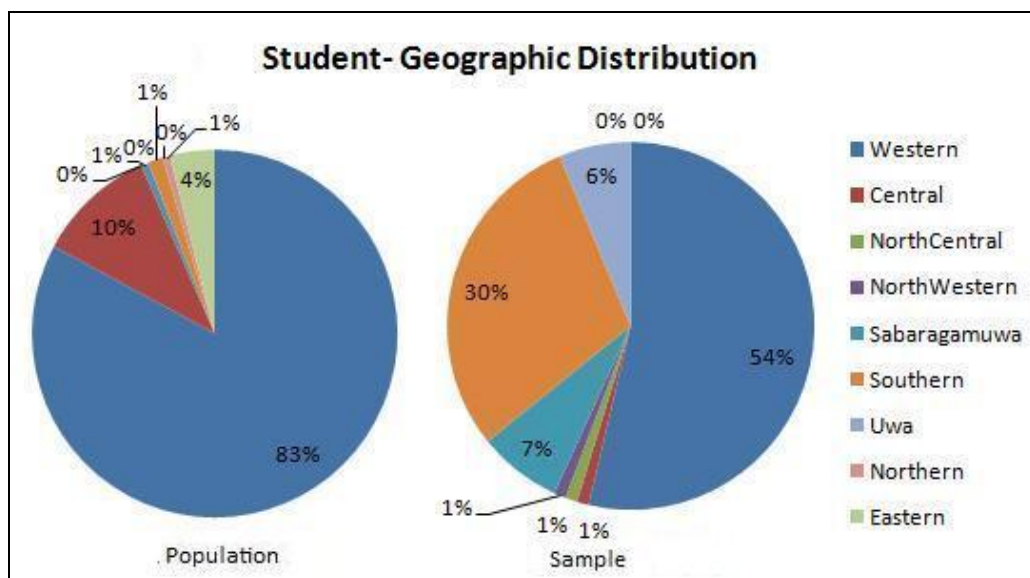


Figure 9-34: Geographic Distribution ICT Population and Sample

9.4.3.3 Employment

The records of the ICT population’s employment status held by the institution were incomplete; however, the available data is represented in Figure 9-35. It is however difficult to compare the ICT population with the respondent sample, because the majority in the population had not revealed their employment status.

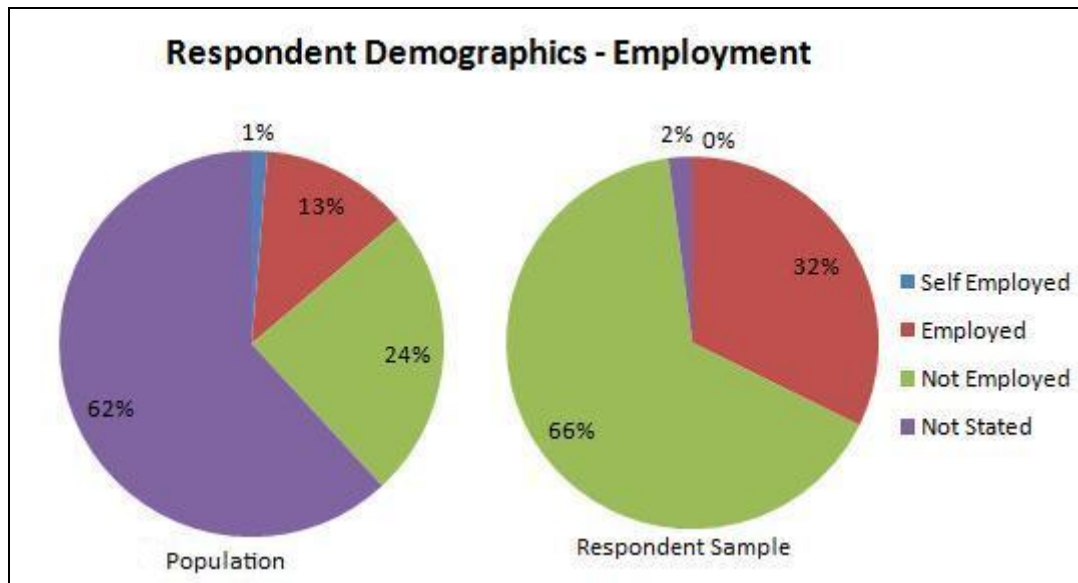


Figure 9-35: Employment Status ICT Population and Sample

Records on marital status, study methods or the level of income were not held by the University. Therefore, these details are presented from the questionnaire data.

9.4.3.4 Marital Status

As can be seen from Figure 9-36, the majority of questionnaire respondents (93%) were single.

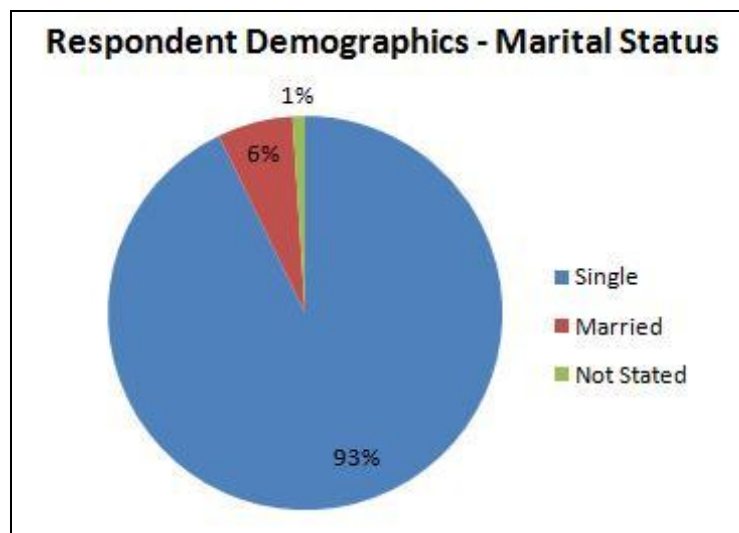


Figure 9-36: Sample Marital Status

9.4.3.5 Study Method

Figure 9-37 shows that 58% of the respondents followed YFU programmes on a part-time basis. 14% of the students were registered on another degree programme whilst continuing YFU programmes.

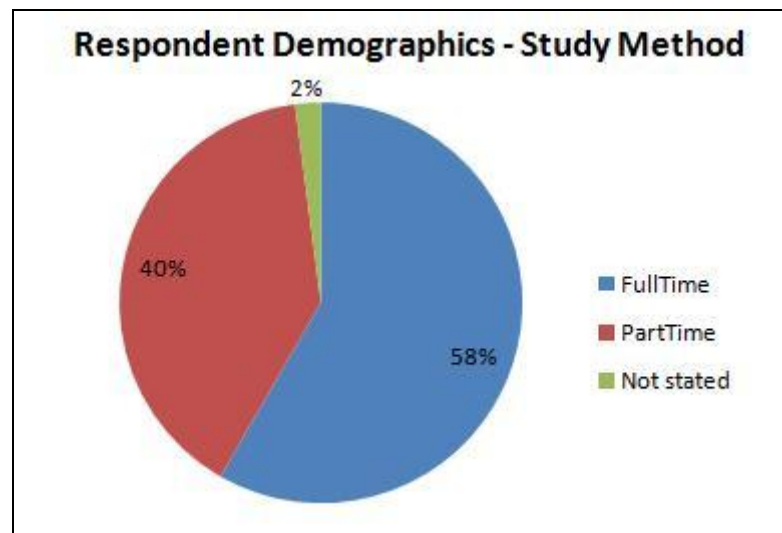


Figure 9-37: Sample Study Method

9.4.3.6 Income

The income distribution of the sample is graphically presented in Figure 9-38. It shows that YFU courses were followed by students of many income levels. In fact, only 8% of students were in the highest income category, suggesting that the comparatively low fee structure in YFU is reasonably attractive for the lower income groups.

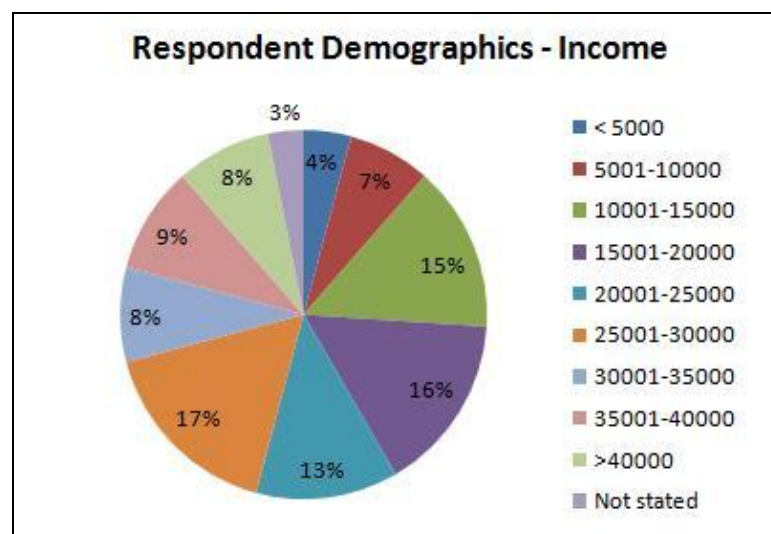


Figure 9-38: Sample Demographics Income

Table 9-25: Income Colombo and Other (percentages)

Household Income	Rs.15,000<	Rs.15,001-30,000	Rs.30,000<
Students from Colombo	20	35	45
Others	29	50	21

Income distribution figures further showed (Table 9-25) that there was a significant difference between the proportion of students from Colombo falling into the highest income category compared to those from elsewhere. This could be a reason for the higher computer ownership among Colombo students. This is in accordance with the general Sri Lankan income distribution pattern where residents of Colombo and the Western Province earn significantly higher amounts than those in other parts of the island (see Appendix - T for statistics).

9.4.3.7 Summary

The ICT programme at YFU offers about 90 places (a year) for HE in the field of IT, and many employed in the IT industry have embraced this opportunity. In the 25-30 year age group, male students from the Western Province were the majority who have gained access to HE through the ICT programme. Generally single, the 20-25 age group, male students formed the majority on the YFU courses. YFU had also extended opportunities for students of all income levels. A significant income disparity was observed between the Colombo-based students and the other students.

9.5 Increasing Opportunities

This section discusses the difficulties faced by DE students in engaging in ICT-enabled programmes.

4. What are the strengths and constraints of the DE system?
 - h. What are the difficulties faced by students in participating in these programmes?

9.5.1 Difficulties

9.5.1.1 Selection Test

Candidates for the ICT programme were selected according to results of a test, held once every academic year. Other programmes at YFU allow universal entrance (though require an additional foundation programme of two academic years for students who are not qualified

in A/L). The University has not stipulated any additional requirements for registration on online plus, blended online or supplementary online programmes.

9.5.1.2 Timely Advertising

Generally YFU advertises in newspapers, and places banners in its regional centres when it is calling for applications. However, other private institutions with similar degree programmes rely on strategic marketing and advertising. These private institutes start their advertising campaigns as soon as pupils have finished their A/L examinations (if A/L results are not mandatory), or from the day the A/L results are released. Conversely, YFU programmes are advertised according to their own schedule, which may or may not coincide with the A/L examination and the release of results. Thus students who are not likely to gain state university places, and are able to afford a private HE, apply for programmes that are advertised first. By the time YFU advertises for its programmes, students who have applied for private institutions have already registered in those institutions. For example, a highly placed official at the DEMP expressed the view:

[W]hen the results [A/L] are out the cream goes to university [state universities], then second lot attracted by the foreign universities, then the next lot attracted by the SLIIT, APIIT or many of the private universities in the country, then the next lot is attracted by [redacted]. [...] [N]ow the results were out about two three weeks ago; [redacted] not yet advertised for their programs. They have their own calendar of advertising somewhere may be in August. So by the time they advertise in August, all the people who can afford to do the programs have gone; gone abroad or already enrolled [in other institutes]. So these people get again this less advantaged or disadvantaged crowd and they don't have many [sic] money, so they can't pay obviously to [redacted], even the Rs. 60,000 people say it is too high.

Box 9-66: A Highly Placed Official at the DEMP

This partly explains the income distribution observed in Figure 9-38.

9.5.1.3 Internet Access and Other Resource Access

Accessing the Internet is important for students because they need to research topics related to their subjects and to be up-to-date with the latest developments in the field. Some of the respondents had neither Internet connectivity nor computers at their homes.

- **Difficulties in using Internet-cafes**

Similar to printing charges, charges for Internet access at Internet-cafes in Sri Lanka vary widely according to location. For example, an Internet-cafe in Kandy charges Rs.3 per

minute (Rs.180 per hour), a cafe in Unawatuna charges Rs.10 per minute (Rs.600 per hour) (World Embassy Information n.d.); in Colombo an hour of Internet access can range from Rs.40, while NACs charge Rs.50 per hour of Internet access for users other than registered students, whom it is assumed have priority. This shows that students in rural areas are disadvantaged because they have to pay much higher prices per hour of Internet access at an Internet-cafe while on average also having a lower income, making the comparative cost even more disproportionate. Manu mentioned this in Box 9-7 and there was another respondent from Kegalle who had difficulties in accessing the Internet from Internet-cafes who remarked:

[U]sing internet is difficult because of the internet traffic and I used internet from net cafe it [was] very expensive and difficult.

Box 9-67: A 23 year-old male from Kegalle

- **Time**

The lack of reliable and timely public transport is one of the main problems that student had when they needed to use Internet access centres. For example, Maneesha spent at least 45 minutes travelling to the centre and each visit she spent an hour and half on the bus (not considering waiting times for buses):

Twice a week I used to go [to Polgolla centre to access the Internet]. Twice a week at the very least [...] I have to travel in 2 buses and it takes about 45 minutes.	සතියකට දෙවරක් දෙකක් වගේ යැවුණා. කොහොමටත් සතියකට දෙසරයක් වගේ යැවුණා. [...] ඔස් දෙකක යන්න ඕන. ඒත් විනාඩි 45 කින් වගේ යන්න පුළුවන්
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Box 9-68: Maneesha-24Y-F-Kandy

- **Quality of the Internet connection**

The speed of connection was a major issue for students who accessed Internet through Internet-cafes. Students and staff of YFU had also experienced deteriorating connection quality at the YFU main campus. The majority of respondents complained that the Internet connection was too slow. Some of the views they expressed in questionnaires are presented below.

- The speed of the connection is not satisfactory. It is slow.
- Sometimes it gets very slow and the pages don't load. So cannot get the contents.
- It takes a considerable amount of time to log on to the Internet and download programs thus I suggest to give [sic] programs in a CD.

Corroborating students' statements, a lecturer expressed the view:

[T]he network here within the campus at least for the last five-six months has been exclusively slow. It is very difficult to go online not to mention about chats. So that kind of limitations are there. Specially during the week days the network connection is not good at all.

Box 9-69: Mr Ran-Lecturer

The slowness of Internet connection observed here ties the discussion back to the findings by Baggaley and Batpurev (2007) of low Internet connection speeds in 12 Asian countries. Respondents who accessed the Internet using mobile broadband connections too had complaints (Box 9-70).

<p>All those are lies. I mean I don't get a [good] download speed or upload speed or anything. I get just a little bit of something. I just have to say that all those [the service provider guarantee on speed] are lies. The speed and things they say are not there. [...] When comparing with what they [service provider] say I am not at all satisfied with what I get. But still, it is with that [connection] that I manage to do whatever I am doing right now.</p>	<p>: ඒවා ගැන නම් ඉතිං බොරු කියෙන්නෙ. ඒ කියන්නෙ ඩවුන්ලෝඩ් ස්පීඩ් හරි අප්ලෝඩ් ස්පීඩ් හරි මොකක් වත් නෑ. සොඩ්ඩක් ඉතිං කියෙනවා මොනවා හරි ඉතිං හම්බ වෙනවානේ. ඒවා බොරුයි කියලා තමයි ඉතිං කියන්න කියෙන්නෙ. ඒවා නම් නෑ ඉතිං ඔය කියන ස්පීඩ් ඒවා මේවා. [...] ඒ ගොල්ලො කියන දේ එක්ක සසඳන්දි මට ලැබෙන දේ ගැන මම සතුටු වෙන්නෙ නෑ. එහෙම වුණත් ඉතිං ඒක හරහා තමයි මම මේ කරගන්න දේත් කරගන්නෙ.</p>
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Box 9-70: Bandula-29Y-M-Hambantota

Not only the speed but also the reliability of connection had issues. For example, the previous discussion showed how some students had to re-sit online quizzes (Box 9-45). Explaining the difficulties of conducting online exams, a lecturer expressed the view:

If we try to have an online exam, where evaluation takes place real time, it is a critical issue that the connectivity is there 100% throughout the session. Because then it is quite difficult if the connectivity is broken students are disadvantaged. Sometimes they can't restart at all, and even if they restart they lose sometime in between. [...] Almost all our online evaluations, question bank, the generation of question papers, marking and all things are done in the main server. That is the whole idea. [...] Then automatically whatever randomized question papers given to each student. That can be done if the network is error free and functioning and reliable. That is not the situation at the moment.

Box 9-71: Mr Ran-Lecturer

As can be seen from the discussion so far reliable Internet connections were not available.

• Limited Access to Resources

YFU has blocked access to some sites including YouTubeTM and Facebook. However, the earlier discussion revealed how engineering students utilized YouTubeTM to research product designs related to one of their courses (Box 9-35). Because some students did not have computers at home, they had no other means of gaining access to these blocked resources.

9.5.1.4 Issues in Using NACs

- **Payment for NACs**

YFU students are all charged Rs.500 (around £2.70) for the right to use NAC facilities. However, students registered in YFU courses felt that this was too expensive as some of them did not use the facilities. For example, Manu commented:

I have to be honest here. There is a big problem with regard to these NACs. They charge around Rs. 900/= (£5) from us for NACs and that payment is a burden for some students. Some may think it is just Rs. 900, but that is in fact a burden for some students. The other thing is that we're allowed to use those resources only for a limited time period.

දැන් මිය කියන NAC සෙන්ටර්ස් ගැන ලොකු ප්‍රශ්නයක් තියනවා අපිට නම්. අවංකවම කරා කරන්න එපැය. අපේ පේමන්ට් එකට මිය NAC සෙන්ටර් එකට කියලා රු. 900/- ක් චිතර ගන්නවා. ඕකත් සමහර ළමයින්ට ප්‍රශ්නයක්. ඒක ඇත්තටම 900/- ක් කිව්වම මොකක්ද කියලා හිතෙයි නමුත් ඒකත් සමහර ළමයින්ට ප්‍රශ්නයක්. අනික මිය රිසෝසස් පාවිච්චි කරන්න ගියාම ඒක ලිමිට් කරලා තියනවා.

Box 9-72: Manu-23Y-M-Badulla

- **Limited Time**

The time that a student can use a NAC facility is usually limited to allow fair access to resources by all students. In Box 9-72 Manu mentioned that the access times to NACs were limited and Dinesh complained that they were entitled to only 15 hours of access.

It is limited. We can only use it for 15 hours.

ලිමිට් කරලා තියනවා. අපිට පැය 15යි පාවිච්චි කරන්න පුළුවන්

Box 9-73: Dinesh-23Y-M-Colombo

- **Resource Access Limitations**

NACs were said to discourage the use of pen drives or USB drives (Box 9-74); some educational institutes in Sri Lanka too used to discourage the use of pen drives in an attempt to reduce virus threats. However, in order to save their work to be accessed elsewhere, especially from a computer that does not have an email facility, students have no other option but to use a pen drive (or other removable media). Thus discouraging the use of pen drives reduces the usefulness of NACs and other computer labs, particularly for those with their own computers but no Internet access.

There is no facility even to use a pen drive in those places [NACs].

පෙන් එකක් භාවිතා කරන්න වුණත් ලොකු හැකියාවක් මිය කියන තරම් හැකියාවක් එතන නැහැ.

Box 9-74: Manu-23Y-M-Badulla

Some sites such as Facebook were also blocked from NAC centres. Pulathisi felt that in order to make learning at a distance more effective with the use of ICTs, it was necessary to allow access to all resources without blocking them (Box 9-75). The YFU has identified the

importance of chat as a tool for supporting DE implementing a “virtual office hour”, allowing students to chat with their lecturer. It seems that this practice of NACs possibly contradicts the YFU’s effort to implement chat as a DE tool.

Why is it that only NAC has problems with FaceBook? They block sites saying students chat in those sites. But students don't chat in our [YFU] lab! [...] What I am saying is, if one is doing distance learning one has to chat. Because if online components are there one has to chat. If we have to discuss something with a lecturer one can use chat. Sometimes a student may exchange things over FaceBook or email, so accessing those resources should be allowed.	NAC එකට විතරක් ඇයි ලේස් ටුක් මුල් වෙන්නේ? ඒවා බ්ලොක් කරනවයි කියලා වැටී කරනවයි කියලා. දැන් අපේ තියන ලැබොරටරියේ වැටී කරන්නේ නෑනෙ ළමයි! [...] මම කියන්නේ අධ්‍යාපනය ලබනවානම් ඩිජිටල් ලර්නිං එකක් තියනවා නම් වැටී කරන්න ඕන. මොකද සමහර විට ඔන්ලයින් දාත්ත යනවා නම් වැටී කරන්නේ නෑකුඩු බෑනෙ. දැන් අපි සර් කෙනෙක් එක්ක මේවා විසඳගන්නේ. වැටී කරන එක ඕන. සමහර වෙලාවට ළමයෙක් තවත් ළමයෙක්ගෙ එයාට අවශ්‍ය දේවල් හුවමාරු කරගන්නේ ලේස් ටුක් එක හරහා නම් ඒක තියෙන්න ඕන. ඊමේල් හරහා නම් ඊමේල් තියෙන්න ඕන.
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Box 9-75: Pulathisi-23Y-M-Gampaha

• Accessibility of NACs

In order to access the Internet from the 26 NACs, some students have to travel a considerable distance. For example, Bandula had to travel at least 60km to the nearest NAC (Box 9-76). Because of the poor public transport services, travelling 60km for a NAC centre is not feasible for Bandula.

If I go home, there is a distance of at least 60km to the nearest NODES centre. I have to come to Ambalantota.	ගෙදර ගියොත් NODES සෙන්ටර් එකකට නම් කි.මී. 60 ක් විතර එන්න ඕන. මම අම්බලන්තොටට වත් එන්න ඕන.
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Box 9-76: Bandula-29Y-M-Hambantota

• Excessive Procedures

Respondents complained of NAC’s excessive administrative procedures. For example, in order to get a headset to listen to a video lecture, a student had to provide written approval from the Vice Chancellor of his university (Box 9-77).

There is no point in just watching a video note; we need to listen to it too. Sometimes when we ask for headphones to listen to a video note, they [NAC staff] tell us to get a letter from the Vice Chancellor. How can a student obtain a letter from the VC, produce it to the NAC head and then listen to a video note? It is such a bother [very disheartening] for the student.	වීඩියෝ නෝට් එකක් අපට නිකං බලලා වැඩක් නෑනෙ. අපට ඒක අහන්න ඕන. සමහර වෙලාවට ඒගොල්ලො කියන දේ අපි වීඩියෝ නෝට් එකක් අහන්න හෙඩ් ෆෝන් එකක් ගන්න ගියාම ඒගොල්ලො කියන්නේ වයිස් චාන්සලර් ගෙන් ලියුමක් අරං එන්න කියලා. ශිෂ්‍යයෙක් කොහොමද ගිහිල්ලා වයිස් චාන්සලර් ගෙන් ලියුමක් අරං ඇවිල්ලා NAC එකේ හෙඩ් ඩිලා ඒ ළමයා වීඩියෝ නෝට් එක බලන්නේ? එතකොට ඒ ළමයාට කරදරයක්නෙ.
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Box 9-77: Pulathisi-23Y-M-Gampaha

Due to all the issues faced in accessing the Internet and other resources from NACs a respondent remarked:

Well if you don't have an Internet connection at home it is very difficult. In my opinion it is compulsory that one has a home Internet connection.

ගෙදරට නැතිනම් ඉතිං ඒකක් හරි අමාරුයි ඉතිං. එහෙමයි මම හිතන්නෙ. මගේ අදහස නම් ගෙදරට ඉන්ටනෙට් අනිවාර්යයෙන්ම තිබිය යුතුමයි කියන එක

Box 9-78: Lasith-27Y-M-Kalutara

9.5.1.5 Technical Difficulties

• Issues Using Moodle™

Respondents have experienced technical difficulties with their “virtual classes” or the Moodle™ courses. Many respondents reported an inability to log into the system. One respondent also observed that their courses required updating, while another accused the system of causing errors in their examination results. Some of the comments received were:

- Some days virtual classes are not working and also system is down.
- [When] we try to log on to virtual classes always "system down" message is displayed. Also they need updating.
- Moodle is not available for all subjects.
- Because of new software used to produce examination results the results was [sic] not accurate. The course materials were not given in time.

• Inadequate Support

There was no uniform way of introducing the LMS to students. If a course was using the LMS it was the lecturer of the course who introduced the system to the students. Some lecturers arranged hands-on sessions, but when the numbers were large they employed overhead projection screen at the first day-school to demonstrate the LMS. However, there were other lecturers who did not employ any such method. They relied on the letter sent by the YFU describing the logging-in process. For example, a lecturer described how it was done on the course she taught:

[I]f you log in [to the LMS] there is a good description given. There is a letter sent to each student when they register on how to access, give a brief description about the advantages and how you can interact with your teachers and that it is an opportunity. It is very encouraging letter how to access and everything. That letter goes. But I don't personally call them and give them exact instructions in a lab. That part I don't because it is a large number of students.

Box 9-79: Mrs Bulegoda-Lecturer

The text-only letter posted to students did not carry illustrations showing how to log on. Thus many students who were seeing a LMS for the first time found it very difficult to

comprehend these instructions. Kamani expressed how they managed to logon to the system at first (Box 9-80).

<p>We got a mail instructing us on how to log in to the Moodle. But still, some had no idea how to log in. It was difficult to log in because we were not used to such systems. It is later, after logging in for several days, that one would get that practice. On the first attempt, anyone would find it difficult to download emails, to post [questions], to use the Inbox; all of that need a bit of meddling around.</p>	<p>මුඩල් එකට ලොග් වෙන්න කියලා දිලා මේල් එකක් එවලා තිබ්බේ. ඒ වුණට සමහර අයට ලොග් වෙන්න තේරුමක් තිබ්බේ නෑ. එක පාරටම ලොග් වෙන්න එච්චරම හුරුවක් තිබ්බේ නෑ. පස්සෙ ලොග් වෙලා ටිකක් දවස් ගියාට පස්සෙ තමයි ඒ හුරුව එන්නේ. කාට වුණත් අර එකපාරටම ඊමේල් එක ඩවුන්ලෝඩ් කරන්න, පෝස්ට් කරන්න දන්නේ නෑ. ඉන්බොක්ස් දාන්න දන්නේ නෑ, ඒක වුවිටක් අර හුරුවෙන්න ඕනනේ.</p>
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Box 9-80: Kamani-28Y-F-Gampaha

Many students were unable to comprehend this information even to log in to the system. This confirms the findings by Tantrigoda (2010) which reported that 85% of students have not used LMS because they were not familiar/confident with the MoodleTM environment.

9.5.1.6 Infrastructural Issues

• Non availability of Internet Facility

Neither wired nor wireless home Internet connections were available for some respondents due to their areas not being serviced by any of the providers. For example, Bandula described how he could not go home for the weekend if he had to access the Internet (Box 9-81).

<p>During the weekend whether I go home or not depends on the sort of work I have for the weekend. There [at home], I can't use even the [mobile] broadband connection. If there is anything I have to do in the weekend, I can't leave, I have to stay in this area [where mobile broadband service is available] That means that even whether I go home or not is decided by that.</p>	<p>සමහර සති අන්ත වලදී අපට කරන්න තියෙන වැඩ ටිකක් එක්ක තමයි ගෙදර යනවද නැද්ද කියන එක තීරණය කරන්න වෙන්නේ. බ්‍රොඩ්බැන්ඩ් එක වුණත් එහේ ගිහින් සාවිච්චි කරන්න බැහැ. දැන් මේ සති අන්තෙ අපිට මොනවා හරි කරගන්න ඕන වුනොත් අපට ඒ සීමාවට යන්න බැහැ. මේ සීමාවේ රැඳෙන්න වෙනවා. ඒ කියන්නෙ ගෙදර යන එක වුණත් තීරණය කරන්න වෙන්නේ ඒ අනුව තමයි.</p>
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Box 9-81: Bandula-29Y-M-Hambantota

9.5.1.7 Computer Literacy

Students who participated in interviews had a high level of ICT skills. But some questionnaire respondents reported problems, as discussed. These were again difficulties that impeded uptake of ICT-enabled programmes.

9.5.1.8 Issues of Recognition

Some students were concerned about the recognition of their qualifications after graduation (Box 9-82) because they have obtained a degree through DE.

We graduate from [redacted]. Those from [University of] Moratuwa, [University of] Peradeniya look down on us as if we had failed A/L and just got away with it. It shouldn't be that way. Even if the person has obtained a degree through distance learning, if the person has knowledge that should be recognized.	අපි [redacted] කියලා අවුට් වෙනවා. මොරටුව, පේරාදෙණිය ඒ ඔක්කොම හිතන්නෙ අපි A/L ලේල් වෙලා නිකං ගන්නට ගියා වගේ. ඒක එහෙම වෙන්නෙ නැතුව ඩිස්ටන්ස් ලේනිං එකක් වුනත් දැනුමක් තියනම් කෙනෙක් ගාව ඒ දැනුම පිළිගන්න ඕන.
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Box 9-82: Pulathisi-23Y-M-Gampaha

9.5.2 Summary

Accessing the Internet and other electronic resources was a major problem for some students. Using Internet-cafes was expensive, and at the University and NACs access to some resources was restricted. Some students also spent a considerable amount of time in transit to access the Internet from NACs but even then, the connections were slow and not always reliable. Students who accessed the Internet through NACs had issues with restricted website access, availability of necessary software, using hardware such as pen drives and headphones, and also due to their excessive administrative procedures (e.g. asking for the Vice Chancellor's permission letter to issue a set of headphones). Technical difficulties were mainly due to the inadequate support but there were system failures too. Some rural areas were not serviced by Internet service providers.

10 Data Presentation Analysis and Discussion – The Comparison of Case Studies

10.1 Introduction

This chapter compares and discusses the two case studies (Orange Valley University – OVU and Yellow Fields University – YFU) presented in Chapters 8 and 9.

10.2 Why Introduce ICTs

There were a number of reasons for introducing ICTs to HE which are outlined in table below. Table 10-1 summarizes the percentage of students from each university agreeing with each of the statements about the introduction of ICTs.

Table 10-1: Comparison – Why Introduce ICTs

Reason	Agreed %	
	OVU	YFU
Make learning materials available 24/7	94	76
Be abreast with the world	76	76
Cost cutting	76	57
Reach disadvantaged students	73	73
Enhance student experience	70	83
Enhance the quality	61	86
Number of Respondents	33	96

There is a marked difference between the beliefs of students at the two universities as to why ICTs were introduced. At OVU students believed it to be because ICTs allowed 24/7 accesses to course materials, but at YFU, students believed that it was for quality enhancement. OVU students were less in agreement that ICTs enhanced quality, contrasting with the widely held belief at YFU. This result is not surprising as the qualitative interviews with OVU students revealed that they were concerned about the quality of learning materials they had received. It is possible that they have attributed the “less than satisfactory” nature of some of the received electronic learning materials, to generalize that ICTs were not a quality enhancement tool. On the other hand, while the majority of OVU students had ready access to the Internet, YFU students had more barriers to overcome in accessing the Internet. Thus it can be seen that for OVU students ICTs meant ready access to course materials while for YFU students this aspect was given little value.

10.2.1 ICT as a Communication Tool

Students of both universities agreed that ICTs as a communications tool improved communication and interaction generally; but there was a remarkable difference between student views regarding the specific improvement of communication and interaction between them and their lecturers. As can be seen in Table 10-2, YFU students were more positive about the improvements that ICTs had brought them in this regard than OVU students, and this was statistically significant at 1% level. Not having direct contact with lecturers due to the hierarchically organized communication flow of the OVU's programme seems to be the primary reason for this.

Table 10-2: Comparison – ICTs Have Improved Communication with Lecturers

	Agree	Disagree	
OVU	17	14	31
YFU	70	20	90
	87	34	121
Chi-square value	6.01		
p value	0.014		

The preferred method of communication with peers differed significantly between the two groups of respondents. Table 10-3 summarises the data by combining communication via email, social networking sites and the LMS into 'computer mediated communication' (CMC). OVU students preferred CMC while the YFU students preferred in-person communication.

Table 10-3: Comparison – Preferred Communication Method (percentages)

	Phone	CMC	Meeting face-to-face
OVU	33	64	3
YFU	33	15	52

YFU students had face-to-face sessions where they met their peers. On the other hand, following a completely online programme, the OVU's DE students did not have that opportunity, but most of them possessed a computer and had Internet connectivity, enabling them to use CMC.

10.2.2 ICT as a Tool for Learning

The majority of students from both universities felt that face-to-face learning was a superior experience to learning through educational technology. As Mason (1999, p41) has mentioned there is a group of students for whom "face-to-face contact is the only satisfactory

form of interaction”. However, students at OVU were more positive about using educational technology. As can be seen in Table 10-4, this difference was statistically significant at 2% level.

Table 10-4: Comparison – Face-to-face Learning is a Superior Experience

	Agree	Disagree	
OVU	23	8	31
YFU	86	9	95
	109	17	126
Chi-square value	5.34		
p value	0.021		

Both groups of students were concerned about the quality and acceptability (by potential employers), of online degree programmes. However students on the OVU programme believed that the same degree conducted online and in-person should receive equal recognition, whereas the YFU students felt otherwise. Table 10-5 shows that the difference was statistically significant. This could be because the students at the OVU’s DE programme were following an online degree and desired their qualification to gain equal recognition.

Table 10-5: Comparison – Degree Conducted Online Should Receive Same Recognition as In-person

	Agree	Disagree	
OVU	27	4*	31
YFU	36	54	90
	63	58	121
Chi-square value	20.5		
p value	0.000		

*Fisher’s exact test was also performed on the data set as there was a small cell value and it too gave the same results as the Chi-square test. This is not surprising as the expected value for each cell was >5

Another important difference observed between the two cases was the YFU students’ fear about the introduction of ICTs to their programmes. The potential for increased course fees seemed to be the main reason for this fear.

10.2.3 ICTs and Educational Access

10.2.3.1 Anytime Anywhere Accessibility

There was no significant difference between students’ views on the anytime and anywhere accessibility allowed by ICTs. However, quite a few students at YFU had difficulties in accessing ICTs in order to make use of the anytime and anywhere accessibility of course materials. Students with home Internet connectivity highly valued the flexibility offered by such accessibility. This result differs from Liyanage’s study (2009) where his data suggested

that learning anywhere at one's own pace does not have a significant relationship with accessibility. But Conole, de Laat et al. (2006) have also reported that students in the UK highly regard the anytime and anywhere accessibility to course materials offered by technology (note: the majority of students in the UK have Internet access).

10.2.3.2 Access to Rural Students

No significant difference was observed between the two groups of students' views on ICTs and access for rural students. Both groups agreed that the use of ICTs would limit chances for rural students. It was also observed that students from Colombo had little sympathy with the difficulties faced by rural students in gaining access to computers and the Internet.

10.2.4 ICT and English Knowledge

Students from OVU reported above average English ability while students at YFU reported varying levels. A marked difference between the English ability of Colombo-based students (higher) and other students (lower) was evident from the YFU data. Nevertheless the majority of both groups agreed that it was difficult to use computers and electronic resources unless one was competent in English. More than a half of the students were concerned that using electronic resources could affect their learning, as not many resources were available in local languages.

10.3 Utilizing ICTs for Learning

OVU students were actively using advanced ICTs for their learning. For example, they used Skype™ for group discussions and TeamViewer® to share desktop screens remotely. As many of OVU students possessed computers with Internet connectivity, this was possible for them. Although YFU students accessed electronic resources for study purposes they did so much less than the OVU students.

10.3.1 Discussions

YFU students' contributions to online discussions were very poor; conversely, OVU students actively participated in discussion forums. Considering students who often (combining almost all discussions and several) participate in discussions along with others (combining rarely, never and not aware), it was seen that this difference was statistically significant, and Table 10-6 presents the Chi-square test data. Participation in online

discussions was mandatory for OVU's DE programme, which may well be the reason for this phenomenon.

Table 10-6: Comparison – Frequency of Contribution to Discussions

	Often	Other	
OVU	25	3*	28
YFU	28	68	96
	53	71	124
Chi-square value	32.0		
p value	0.000		

*Fisher's exact test was also performed on the data set as there was a small cell value and it too gave the same results as the Chi-square test. This is not surprising as the expected value for each cell was >5

10.3.2 Electronic Resources and Library Resources

OVU students used web resources extensively and one reason for such practice was the non-availability of library resources for them. On the other hand, YFU students used library resources as well as web resources, but preferred printed material to electronic material as they found it more accessible and easier to use.

10.3.3 Assignments

Both groups of students and their lecturers seemed to be relaxed about plagiarism and did not seem to consider it to be a major offence. OVU's DE programme did not employ procedures for active plagiarism detection/prevention whereas YFU actively employed measures to detect/reduce plagiarism; the staff of YFU also introduced their own mechanisms to reduce the occurrence of plagiarism. Even though both universities had strict punishments for plagiarism, the staff did not seem to be bothered about copied content if they felt that the student was able to understand it. This raises questions about institutional ethics regarding plagiarism.

10.4 Gaining Access to Education

10.4.1 Why Select Distance Education

The majority of students from both universities valued flexibility in programmes. The prestige attached to an OVU degree and the affordability of YFU programmes influenced student enrolment decisions. There were also many students who selected DE because they failed to secure a place (or sometimes a useful place) in the state university system. This is in

accordance with the findings of Nanayakkara and Wijesuriya (2007), who reported that 75% of students who applied for state university education were unable to secure a place.

10.4.2 Readiness of the Learners

10.4.2.1 Skills

OVU students reported above average computer skills and good English language ability, but tutors reported that there were a few students with problems; at YFU students had different levels of computer skills with some not even able to use computers. Computer ownership and computer skills showed a significant relationship in the case of YFU. Many students at YFU were managing well with their level of English while a minority of students had problems. Students from Colombo showed better English language skills. Students needed time to adjust to DE and to develop independent learning skills.

As the government's vision was to produce internationally employable graduates, the Ministry of Higher Education (MoHE) maintained that the programmes 'should be' conducted in the English medium (Box 10-1).

A person who cannot use English cannot follow these courses. That is exactly a point. But we can't do anything about it. I think these courses should be in English medium. We have to be in line with the global trend. Otherwise we are going to be backward.

Box 10-1: A Highly Placed Official at the MoHE

But Rassool (2012) has shown that language by itself cannot effect societal development (even though postcolonial governments believe that it is so) when she discusses the political economy of English language and economic development.

10.4.2.2 Motivation

The students who participated in interviews from both universities were highly motivated to complete their programmes. However, there were other groups of students who needed continuous encouragement and guidance to remain in the programme. Unless made compulsory or extra marks were given, the majority of students from the YFU did not engage in online activities.

10.4.2.3 Resources

The ownership and use of computers was significantly different between the two universities. OVU students used computers either daily or at least several times a week; conversely only a minority of YFU students used computers daily; as can be seen in Table 10-7 this was statistically significant.

Table 10-7: Comparison – Frequency of Using a Computer

	Daily	Less often	
OVU	29	1*	30
YFU	38	56	94
	67	57	124
Chi-square value	29.0		
p value	0.000		

*Fisher's exact test was also performed on the data set as there was a small cell value and it too gave the same results as the Chi-square test. This is not surprising as the expected value for each cell was >5

Statistical information showing the significance of computer ownership between the two groups is given in Table 10-8. In the YFU sample, the difference between students from Colombo and students from outstations with respect to computer ownership was also significant.

Table 10-8: Comparison – Computer Ownership

	Owns computer	Does not own computer	
OVU	28	2*	30
YFU	65	28	93
	93	30	
Chi-square value	6.76		
p value	0.009		

*Fisher's exact test was also performed on the data set as there was a small cell value and it too gave the same results as the Chi-square test. This is not surprising as the expected value for each cell was >5

Similarly, as Table 10-9 shows, the Internet access frequency too had statistical significance with almost all OVU students accessing the Internet daily.

Table 10-9: Comparison – Internet Access Frequency

	Daily	Less often	
OVU	30	1*	31
YFU	25	68	93
	55	69	124
Chi-square value	46		
p value	0.000		

*Fisher's exact test was also performed on the data set as there was a small cell value and it too gave the same results as the Chi-square test. This is not surprising as the expected value for each cell was >5

10.5 Characteristics of Students

61% of the students in the OVU DE programme, and 74% in YFU ICT programme were male. The median age of the OVU population was 24.9 years and for the sample it was 23.8 years. At the YFU's ICT programme the median age was 28.1 years and for the sample it was 23.1 years. This observation is nothing new as Asian DE institutes were observed to attract students under 30 years of age and more males than females (Perraton 2000). This is also in accordance with findings of Liyanage (2009) who has shown that 72.7% of respondents in his study were below 30 years of age.

Half of the OVU's DE population were from the Western Province whereas in the YFU's ICT population it was 83%. Considering that only 28% of the Sri Lankan population resides in the Western Province (Department of Census and Statistics Sri Lanka 2010a), these programmes seem primarily to serve the needs of Western Province dwellers. The median monthly household income for the OVU sample was Rs.34,376 (£191), higher than the national median household income (Rs. 23,746 - about £135); in the YFU sample it was Rs.22,709 (£126), lower than the national median household income. This could be a significant cause for OVU students being more likely to own computers and have home Internet connections. Liyanage (2009) claims that nearly 29.6% of students in online programmes in Sri Lanka were from the "low income category", which he considers to be represented by individual earning of less than Rs.10,000. As his data represents the monthly income of employed students rather than the household it is difficult to compare it with the results of this study or with national statistics. Considering all accounts from students and observing the distribution of computers and income levels it seems that the OVU students are better off than the YFU students.

10.6 Increasing Opportunities

Both the OVU's online DE programme and programmes at the YFU with supplementary or blended online components had increased opportunities for HE.

10.6.1 Difficulties

Participants of both programmes faced similar issues such as: Internet connection speed and reliability; difficulties with logistics, restricted access to some resources; inconvenient

opening hours, excessive procedures and inadequate support services with respect to the Internet access at NACs, Internet-cafes or University computer laboratories. There were no gender differences observed with respect to accessing the Internet from Internet-cafes, thus contradicting the results of Jamtsho, Rinchen et al. (2010b) where a possible gender difference in accessing Internet from Internet-cafes in Sri Lanka is suggested. However, it is worthwhile noting that only a small percentage of participants used Internet-cafes.

Observing NAC access statistics given in Figure 10-1, the month of April shows a drastic drop in OVU user accesses. There are two plausible explanations for this.

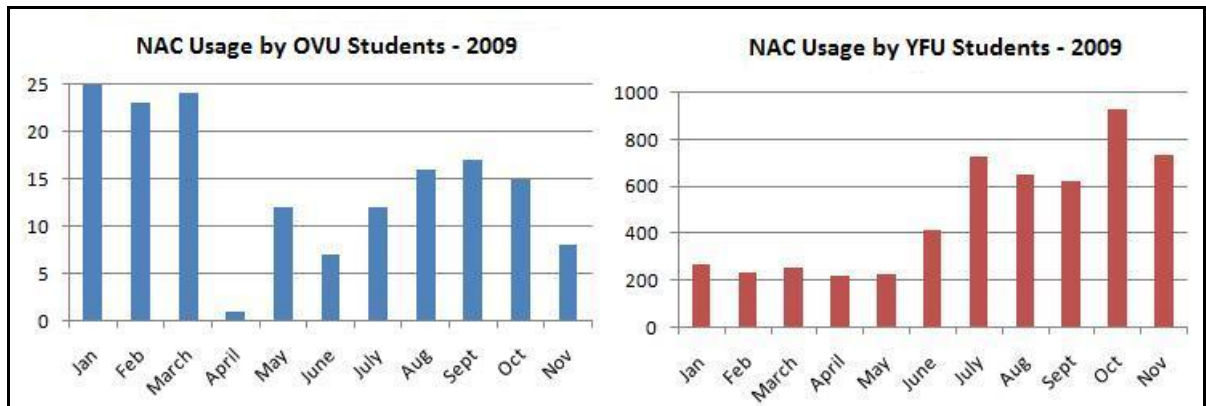
- a. Nishara's description of the LMS server failure during the Sinhala New year holidays (mid April).
- b. Exams for the year 2009 for OVU's DE programme were held at the end of April and in November.

It is therefore likely that the students' access to the system was minimal during April due to exams, the festive season, holidays and possibly server failure. Also, as many interview participants mentioned, students had acquired home Internet connectivity after commencing the programme; this could explain the reduction in use of the system later in the year.

A generally increasing pattern was seen with the YFU student access to the system. As the numbers represented here are all concerned with YFU student access, and their exam periods are at different times of the year, it is difficult to interpret the pattern. However, as the third round of NACs were only opened in 2009, the increase of student numbers could be due to the availability of more centres as the year progressed.

In general, usage statistics (Appendix - S) of the NACs show that some of the centres are greatly underutilized. For example, Anuradhapura NAC was used by only one individual from August to October 2009 while Monaragala, Kurunagala, Kegalle, Galle, Anuradhapura, Ambalantota, and Ambalangoda centres had fewer than 25 individuals visiting them each month during the period of August to November 2009. On the other hand, Colombo and Kandy NACs were heavily utilized with more than 300 users visiting them in some months. Because all these centres had the same number of computers, scanners, photocopiers and printers, while some resources were idling in remote locations, users in Colombo and Kandy centres had restrictions in terms of access times, to ensure fair access for all.

Students who used NACs felt a strong desire to have their own Internet connection in order to engage in a programme using ICT for delivery. Conversely, authorities and some students already possessing connectivity felt that it should be possible to manage only with NAC facilities.



Note: Graphs use different scales

Figure 10-1: Comparison – NAC Use by Students

Technical difficulties relating to LMS were common to both groups. OVU students did not face many difficulties relating to login and other general navigation possibly because they had a hands-on introduction to the LMS prior to their programme. But erroneous and substandard materials as well as slow response from their tutors posed major difficulties for OVU students.

Power failures and interruptions, non availability of ADSL facility, and rural areas not being served by any service provider were the main infrastructural issues. Rural dwellers wanted to use ICTs but they lacked support and the infrastructure.

10.7 Summary

OVU students valued 24/7 access to course materials while YFU students expected quality and experience enhancement from ICTs. Both groups agreed that ICTs improved communication and interaction. The preferred method of communication differed between OVU students (CMC) and YFU students (in-person). Face-to-face learning was identified as a superior experience. Anytime and anywhere accessibility was of little use to rural students with access problems while English remained another barrier. OVU students utilized online discussions but these were not popular with YFU students. Plagiarism was not considered to be a serious issue by either group. Flexibility, the reputation of the institution, affordability

and no previous opportunity for HE were main reasons provided for the selection of DE programmes. Computer ownership and the frequency of computer and Internet use were significantly higher in OVU students, and they were from higher income households. Young males from the Western Province were the largest group who had gained access to HE through these programmes. The main issues raised were: availability of services in rural areas; quality of the Internet connections; institutional procedures on access to resources; Internet regulation and quality of learning materials as well as student support services. Therefore it can be seen that there are many barriers to overcome in implementing ICT-enabled DE programmes in Sri Lanka.

11Key Findings

11.1 Introduction

This chapter brings together the key findings from the data presentation, analysis and discussion presented in Chapters 7, 8, 9 and 10 under the themes:

- Quality assurance
- Location
- Access to resources
- Digital literacy
- Language

11.2 Preamble

The Sri Lankan government, through the Distance Education Modernization Project (DEMP), introduced ICTs to undergraduate DE programmes believing that it would provide more opportunities for HE at a lower cost, while improving the quality of programmes. These are reasons why many educators in both developed and developing countries use Open and Distance Learning (ODL) (Harry and Perraton 1999; Perraton 2000). Orange Valley University (OVU) has introduced a new fully online programme under the DEMP initiative; Yellow Fields University (YFU) has introduced ICT in three ways to their DE programmes: supplementary online, blended online and online plus.

Despite heavy resistance by student movements, a few state universities have introduced ICT-enabled Distance Education (DE) programmes. These programmes also had to overcome the resistance of traditional academics to change in terms of teaching practice as well as other areas. Thus implementing these ICT-enabled DE programmes within the highly bureaucratic conventional state university system in an attempt to increase and widen access to HE for Sri Lankans is commendable. In addition, establishing a platform for online DE in Sri Lanka by implementing National Online Distance Education Service (NODES) and NODES Access Centres (NACs) that could be used by both public and private HE providers too, is a great achievement for Sri Lanka. However, the successful implementation of these programmes was constrained by issues that will be discussed below relating to five themes.

11.3 Themes

Issues relating to quality, location of residence, access to resources, digital literacy and language were observed throughout the research. Thus these are used to thematically summarize and present the study findings.

11.3.1 Quality Assurance

There were several types of quality issues that surfaced in the two case studies.

11.3.1.1 Teaching Materials

Erroneous and substandard teaching materials were significant issues that students faced in the online programme of the OVU, which raised issues about credibility of the institution. Further, once errors were pointed out, the follow-up action of the institution (recall the incident reported in Box 8-74) could hardly be considered professional.

Data from Liyanage (2009) suggests that:

[m]ost materials violate online instructional principles and they under utilize online ICT facilities [original emphasis] (Liyanage 2009, p22).

The similarity of Liyanage's findings and the findings of this research suggests that there are serious issues with the quality of the material in these online programmes.

In his critique of eLearning at universities, Smithers (2011) too observed substandard, outdated, and even erroneous content. Thus he says:

Not many courses have any form of content online whatsoever [...]. When a course does have online content it is invariably rubbish.

Thus, erroneous and substandard materials are not issues pertaining only to OVU's online course or to Sri Lanka; it is a general issue observed in eLearning that requires a conscious effort to eradicate.

11.3.1.2 Plagiarism

Neither students nor lecturers considered plagiarism a serious offence, despite university regulations against such malpractices. Both plagiarism by students in producing assignments and plagiarism by course developers in preparing course contents was observed in the case studies. Observing a wide array of plagiarism by well known people such as the historian Stephen Ambrose, Cooke (2007) states that

it almost seems that intellectual dishonesty and cheating are acceptable and forgivable, and occasionally profitable, offenses. This lackadaisical attitude is trickling down to students of all ages, and it is eroding the moral and intellectual development of future generations (Cooke 2007, p73).

Copying and sharing assignments have become easier with electronic assignment submissions (Adams 2011); previously students had to manually copy an assignment, but today it takes only a few mouse clicks. In fact, Liyanage (2009) reported that the majority of online DE students from Sri Lanka agreed that ICT presented greater opportunities for plagiarism. Andersson and Hatakka (2010) reported instances where students had copied assignments in another Sri Lankan DE programme that used electronic submissions. As Adams (2011) has shown in his analysis, tackling a case of plagiarised work could generally take 10 times longer (or more) than actually marking an honest assignment; thus staff could have ignored such instances to 'take the easy way out'. However, internal and external monitoring should have detected such instances, even where staff have ignored it.

The lack of competency in English language, as reported in the study, could have been a barrier for students who wish to paraphrase content from other sources. This dilemma faced by non-native English speakers is acknowledged by Baggaley (2010) in discussing problems faced by researchers and evaluators of DE outside North America, Europe and Australia.

In the UK, JISC (Joint Information Systems Committee) provides a plagiarism advisory service together with access to "TurnitinUK" – plagiarism detection software (JISC 2009). This type of advanced detection is not yet used by most Sri Lankan state universities. Further, the researcher's own experience in completing undergraduate education in one of these institutes is that there is hardly any guidance for undergraduate students on proper referencing, and no awareness programmes on the issues of plagiarism. This lack of initial understanding of the seriousness of plagiarism could also have shaped students' views on the issue.

On the other hand, course material being copied from elsewhere without acknowledgement, especially from non-authoritative sources, is another serious issue providing a poor example to undergraduates using the materials. The DEMP has developed quality assurance standards (Coomaraswamy and Abeywardena 2007; Rama and Hope 2009; Coomaraswamy, Rama et al. 2010) that have gained international recognition. However, non-compliance to those

standards seems to be an issue. Further, as the OVU is only employing internal reviewers, mainly to review pedagogical aspects, this serious breach of established academic norms has so far gone unnoticed.

11.3.1.3 Student - Tutor/Lecturer Interaction

Students at the OVU were the victims of an administrative decision, which implemented a hierarchical information flow within the programme delivery structure, denying students contact with lecturers. Queries that tutors were unable to answer took several days or even weeks to ascend and descend through the hierarchy, delaying responses and making them of little use to the initiator of the query. On the other hand, responses to queries have also been delayed by some “online” tutors who let weeks go by without logging onto the system.

As discussed in Chapter 4, in a DE setting where students are separated from their tutors/lecturers there is likely to be a greater transactional distance than in conventional education. More dialogue or interaction is likely to reduce this transactional distance (Moore 1993). Owtson, Garroson et al. (2006) have shown that student satisfaction with blended courses to be highly dependent on the level of interaction. However, as can be seen from the case studies, the lack of response from tutors to student queries is unlikely to reduce transactional distance or provide student satisfaction. Moreover, as Wheeler (2007, p111) has shown, the lack of immediacy or “the extent to which students feel they can gain quick access to their tutors, and their perception of the timeliness of tutor responses” is likely to increase the transactional distance. As immediacy of response from tutors is an important form of encouragement for distance learners (Wheeler 2007), the absence of such response in the OVU case study may well have contributed to the higher number of student failures (Recall that only 36 students remained in the final year from an entry cohort of 98 students).

Chapter 4 showed that learner-instructor interaction that happens “between the learner and the expert who prepared the subject material, or some other expert acting as instructor” is regarded as essential (Moore 1989). However, as the case study has shown, tutors faced constant difficulties in answering student queries, which students interpreted as tutor incompetency. Therefore it is questionable whether the tutors could be called “experts”. These tutors had received training in online tutoring and mentoring; however, as online tutoring itself is new to Sri Lanka, it is highly likely that they have not have had a chance to

observe other online tutors and examples of best practice; furthermore not having been an online tutee they may be less able to understand and empathise with distant students' difficulties. Moore and Kearsley (2005, p136) claim that

[t]he best distance teachers are empathetic [...] even when filtered through technologically transmitted communications.

Therefore, the newness and lack of experience of these tutors may also have been reasons why they required a considerable amount of help in answering student queries. Liyanage (2009) has also reported on the poor quality of tutor/lecturer interaction in online DE in Sri Lanka and suggested that timely, constructive and frequent feedback should be promoted. Viewed from this perspective it is evident that the students of the online programme were disadvantaged as the "learner-instructor" interaction was not properly facilitated.

11.3.1.4 Pedagogy

The DEMP has emphasised the importance of introducing online technology to DE in Sri Lanka. The analysis of the OVU case study suggests that this exclusive focus on online technology has overlooked the pedagogical aspects. For example, the majority of learning materials were presented as black-and-white PDF notes – only using online technology to distribute course notes; in instances where online quizzes were used, they were not properly planned or designed to be fully beneficial to the learner, resulting in learner frustration.

11.3.1.5 Staff Knowledge and Awareness

Throughout the study it can be seen that there is a lack of staff knowledge and awareness about how to support online DE. For example, tutors required extensive help from lecturers to answer student queries; lecturers seemed to be unaware of the importance of interaction in the distance educational mode of study and the practice of DE professionals; and the NAC staff were not aware of the procedures to be adhered to when students requested headsets. Even the principles of DE seemed alien to some lecturers who were not comfortable with their course materials being reviewed by a pedagogical expert. These are a few of the many instances that showed issues with staff knowledge and awareness. Because the online mode of learning is new to Sri Lanka, it is possible that none of these groups have had sufficient understanding, experience or training. Furthermore the fact that many of the lecturers had only experienced the conventional mode of education may be another reason for their lack of awareness in distance educational practices.

11.3.1.6 Recognition

Students' anxiety over recognition of DE programmes when the educational institute had little respect for was evident. On the other hand, students who were willing to register on DE programmes at a prestigious institute were anxious over the use of the phrase "external degree" due to the notoriety it has gained. The issue of DE being considered as a "second class education" (Uturupane, Millot et al. 2009) is not new and not limited to Sri Lanka (Perraton 2000). However, there are success stories such as the case of the OUUK (The Open University of the United Kingdom 2009). Therefore, recognition is something that needs to be earned by displaying the capacity of distant educated students, which is a long-term process.

11.3.2 Location

Throughout the study it was evident that there were differences between students located in different areas of the country. Three such location categories were observed: Colombo and immediate conurbations; other cities (such as Galle, Kandy and Matara) and their immediate conurbations; outstations and rural areas (including villages and estates).

None of the respondents were from estates – the areas that are most deprived of ICT and services (recall statistics on computer ownership and household income – Appendix - T); there were very few respondents from outstations; a few were from other cities and their conurbations, while the majority consisted of dwellers from Colombo and its immediate conurbations. The analysis of the geographical distribution of student population also confirmed that the ICT-enabled DE programmes were most appealing to students from Colombo and its conurbation. Thus there is evidence that the new DE programmes are serving the needs of students from this location category.

Differences between these three groups of students were visible in their attitudes, level of skills and resource ownership. Some Colombo-based students were less empathetic to others who had difficulties with English, or lacked access to computers and the Internet. On the other hand, outstation students and students from other cities were aware of the difficulties faced by other students and were more considerate. It was also observed that many Colombo-based students were economically better-off than their counterparts and had more resources such as computers, Internet connectivity, and library access (resource access will

be discussed as another theme); their English ability was also better. This economic disparity is in fact in accordance with the income distribution of the country. For example, when the mean household income of a Western Province household was Rs.47,118, it was only Rs.24,162 in estates; in Colombo the value was as high as Rs.51,070 (Department of Census and Statistics Sri Lanka 2011a) – even more than double the mean income of an estate household portraying the stark disparity in income distribution of the country. (See Appendix - T for further statistics).

Outstation students, especially from rural districts were unable to acquire Internet connectivity even when they were able to afford it, because there was no infrastructural support. Thus their location had a significant impact on students' access to resources. The DEMP technical assistance report stressed the need to provide educational opportunities for “rural poor, women, and displaced persons in underserved areas of the country” (Asian Development Bank 2000, Appendix2-p2) with the use of ICTs. The DEMP proposal recommendation (Loxley, Ho et al. 2003) stated that one of its aims was to introduce

distance-learning programs to provide outreach through quality on-line academic programs to working rural students who cannot leave their jobs or families to study in cities (p4).

Further, it stated that

[t]he project supports increasing educational opportunities in rural areas for those unable to attend formal schools (p5).

However, as both case studies has showed, the new ICT-enabled programmes were more appealing to young, unmarried, male Western province dwellers; thus contradicting the original emphasis of the project. Gunawardena (2008) too raised similar concerns.

11.3.3 Access to Resources

Issues of access to resources such as computers, the Internet and web resources (due to imposed regulations for Internet access) were observed.

11.3.3.1 Infrastructure

Resource access was mainly a problem for outstation students. The non-availability of an ADSL facility even affected the students only a few miles from town centres. On the other hand, students living in rural areas of distant districts such as Hambantota had no means of

connecting to the Internet from their homes, either wired or wireless, because the infrastructure was not available.

Under the e-Sri Lanka initiative, the information infrastructure of the country is one of the six programme areas under development. Information infrastructure encompasses:

1. Connectivity – availability of a delivery channel for information and ICT services
2. Accessibility – availability of connected access devices
3. Content – availability of timely, relevant and localised applications, information and services (Information and Communication Technology Agency n.d.)

Much effort is being devoted to implementing the vision of achieving 1000 telecentres in rural areas in order to allow access for rural communities. As the discussion so far has shown, location also has a great impact on what services one can acquire. From 2007 to 2008, Sri Lanka improved its ICT Development Index from 2.32 to 2.51 (International Telecommunication Union 2010). But when considering the rural information infrastructure, in some distant places there was hardly any improvement seen apart from the increase in mobile phone usage. Even though the infrastructure was limited, it was encouraging to observe village people aspiring to become part of the digital world.

Power failures and voltage fluctuations were also problems that affected students. Electricity is essential to make use of most ICT equipment. In urban Sri Lanka 96.5% households are powered with electricity and nationally it is 85.1% (Department of Census and Statistics Sri Lanka 2011b). On the grounds that electricity is widely available in Sri Lanka, Satharasinghe (n.d.) argues that it is not likely for Sri Lanka to be “left behind in the Digital Divide” due to lack of electricity. However, when considering the quality and reliability of electricity, and the damages unregulated power supplies could cause to ICT equipment, whether his argument holds is questionable. Van Dijk (1999) argues that in developing countries, supplying reliable electricity, giving access to old media (such as telephones) and improving literacy should take higher priority. However, as Sri Lanka has already achieved comparatively higher levels of traditional literacy, the need to provide reliable electricity, provision for ICT equipment and Internet access together with programmes for improving digital literacy (discussed under another theme) are of great importance.

Sri Lanka is improving its infrastructure to support ICT diffusion, but there is still much to be achieved. Observing the context of Asia as a whole, Wikramanayake and Baggaley

(2010) emphasise the importance of government policy and intervention in infrastructural development. They conclude that the emphasis on online education in developing countries has overlooked accessibility issues, especially in South Asia.

11.3.3.2 Computers and the Internet

Most students who did not own computers and/or have Internet connectivity faced problems in accessing these resources due to: logistics, administrative decisions (opening hours, excessive procedures, Internet regulation), and costs. It is clear that even though NAC implementation authorities thought NACs were providing services all seven days of the week (Liyanage 2010), many of them were open only on weekdays (as could be seen in Box 8-66), thus limiting access for employed students. Female students in YFU reported fewer opportunities to use computers than their male counterparts. This result is in accordance with the findings of Liyanage (2009) where he reported females having fewer visits to Internet access centres. It is possible that cultural barriers and perceptions of personal safety in visiting access centres may have affected this phenomenon.

Each NAC was equipped with the same set of resources. However, as shown by the NAC usage statistics, while some centres were heavily utilized, many others located in remote areas were under-used. One possible reason for this fact could be the transportation difficulties that persist in these areas (as can be seen in Bandula's quote in Box 9-76). On the other hand, the low population density of these remote locations could have also been a reason for this phenomenon. Whatever the reasons may be, the decision to allocate each centre the same set of resources has been ineffective: depriving users in densely populated areas.

Internet connectivity charges have decreased considerably during the past few years. However, the connectivity charge and initial cost of connection (buying the dongle) for mobile broadband is still comparatively high. Since Sri Lanka telecom ADSL connections are only available to a minority of the population (living close to city centres), the only option for broadband connectivity for the majority is the more expensive mobile broadband service. On the other hand, if dial-up connectivity is used, the time connected is charged for a voice call by the phone provider and for a data connection by the Internet service provider.

Therefore, the connectivity is still expensive. This was also reflected in the PANdora network survey (Jamtsho, Rinchen et al. 2010b).

Students who had home connectivity were able to communicate with their lecturers out-of-hours, especially late at the night, to clarify issues using online chat sessions. Further, OVU students were using specialized software tools to communicate amongst themselves. This software was not available at telecentres and the slow connectivity at Internet-cafes was also not likely to support them; almost all of these communications were late night interactions when the NACs were closed. Thus a student not possessing his/her own computer and Internet connectivity at home would lose these opportunities and would likely be a “misfit” (van Dijk 1999) in that community.

Different policies on Internet regulations were practised by access centres. Access to social networking sites such as Facebook and video sharing sites such as YouTubeTM was blocked. However, students sometimes use these sites for educational purposes. For example, information relating to group assignments was shared using social networking sites, and YouTubeTM videos were used to research product designs. Students who had home connectivity were able to access and use the resources available through these ‘blocked’ sites, while students who depended on access centres did not have this option. Access centres also had varying policies on the use of removable storage (such as pen drives), and the use of headphones. Their excessive procedures actively discouraged students from using that hardware. Here also it can be seen that students without home computer/Internet connectivity were greatly disadvantaged.

Work by the PANdora research network has revealed that Internet-cafe use is not popular in Asian countries due to slow connectivity and virus issues. Furthermore many have complained of the inability to download multimedia files (Wikramanayake and Baggaley 2010). This observation is consistent with the results observed in the case studies. As discussed in Chapter 9, Internet access charges at Internet-cafes varied widely and in some instances they were as high as Rs.600 an hour thus too expensive for students to use.

Students acquired home Internet connectivity as soon as they could, because depending on the educational institute, access centres or Internet-cafes were difficult with all the restrictions and connectivity issues. Further, students who had used access centres stressed

the need to acquire a home Internet connectivity if one decides to register in a DE programme that uses ICT for delivery.

11.3.3.3 Quality of Internet Connectivity

Internet connections had issues of speed (recall findings by Baggaley and Batpurev 2007) and reliability. Even the dedicated high-speed connections at educational institutes such as YFU had problems, which caused online evaluations (such as quizzes) to be a stressful experience for both students and lecturers. The wait time to download page content was a major issue for students who used communal access facilities, because the time they could spend at the computer was restricted. On the other hand, students who paid for hourly access at Internet-cafes or who used dial-up connections (who pay for the time connected) were also adversely affected. The inability to download large multimedia files was a common complaint by students who used Internet-cafes to access material. This shows that the prevailing Internet infrastructure is lacking the capability to properly provide for online distance learners.

11.3.3.4 Library

For an undergraduate student in a developed country, it would be unimaginable not to have access to library materials during their course of study. Students on the OVU programme, who did not receive library services from their University due to resource limitations, had great difficulty in locating reference materials. Students speculated that some of the dropping out had a direct relationship to the non-availability of materials. The pace of change in fields such as IT has made it impossible for traditional Sri Lankan libraries to maintain currency, thus students were referring to their material as “ancient”. As discussed by Drahos and Braithwaite (2002), the high price of books printed in developed countries is another issue that limits accessibility for Sri Lankan students. However, a minority of students, who possessed memberships with premium private libraries located in capital cities, were able to access relevant materials, again displaying the importance of location.

11.3.3.5 Monetary

Students who lacked economic stability were anxious about the introduction of ICTs to their programmes, fearing that it would increase course fees, thus making the programme unaffordable. OVU’s online programme was seen to be expensive, but some students were

willing to pay the premium in order to gain a degree from the prestigious OVU. However, the fact that 63% of the OVU student population household income was greater than the national median household income, does suggest that the programme is appealing to higher income groups. In fact, at the time of data collection OVU was reviewing the online programme's cost structure in an attempt to reduce its costs in a bid to make the programme sustainable by making it appealing to a wider range of students.

Students incurred additional direct costs for printing, accessing the Internet, travelling (to and from telecentres) or buying a PC, and indirect costs such as increased electricity charges. As could be seen in the previous discussion, apart from location, the lack of disposable income has been a major issue for students in acquiring resources.

11.3.4 Digital Literacy

Even though almost all respondents were computer literate in terms of the definition adopted by the Department of Census and Statistics Sri Lanka (2009a), it was found that some respondents were not able to perform tasks such as searching the Internet or sending emails with attachments, while a few others had problems even with the use of a keyboard. In order to be able to engage in a learning activity in an ICT-enabled environment, it is vital that students are able to utilize the tools (in this case ICT) efficiently and effectively. As discussed in Chapter 5 an increasing division is seen in usage access (van Dijk 2005).

According to Warschauer (2003) and as shown in Chapter 5, establishing telecentres or providing schools with equipment alone is unlikely to improve digital literacy. In fact, one respondent revealed that she was unable to use the computer that was available to her thus confirming this argument. However, there was a significant relationship between the level of computer skills and ownership of home computers, showing that students who have acquired motivational access and material access displayed better skills access as argued by van Dijk (2005). The need to increase computer literacy among potential learners is stressed by Nanayakkara and Wijesuriya (2007). Thus, the educational authorities' expectation of digital literacy from school leavers on the basis that schools were provided with ICT equipment is imperfect, and much effort needs to be focused on increasing digital literacy among students.

11.3.5 Language

Despite English being the medium of study, some students, mainly from outstations, had issues with English language proficiency. It is suggested that in countries where university education is conducted in a language that is different to the language used in school education, this can contribute to social inequality (World Bank 2002). Considering the English language ability and economic status of students from Colombo and its conurbations, it does support this point. Gunawardena (2008) has also pointed out that English as the medium of instruction in DE programmes introduced under the DEMP could hinder access for a considerable proportion of school leavers.

As shown in Chapter 10, the government maintains that the programmes should be conducted in English, even though this restricts successful participation for a sizable proportion of school leavers not fluent in English. Many postcolonial (ex-British) governments have attached high value to English HE (Rassool 2012). But it is not very clear how HE participation could be widened through English medium HE, when the Ministry of Education struggles to allocate rural schools with resources (such as trained English teachers) for learning English in the first place.

There is very little web content available in local languages and this was a concern for many students. Because school education in Sri Lanka is almost completely conducted in local languages, the majority of the population is only competent in these languages. This, together with the lack of local language content on the web, creates a key issue as a large proportion of the population are unable to make use of much of the Internet (particularly web-based resources) (Gamage and Halpin 2007) even if they are digitally literate. This links the discussion back to Warschauer's (2003) work that was discussed under digital resources in Chapter 5. In addition, unfamiliarity with English as used in computers could be a barrier to gaining motivational access, the first of the four stages of access (van Dijk 2005) essential for gaining full participation in the digital world.

Sinhala and Tamil Unicode support is now in place and a team from the University of Colombo School of Computing (UCSC) is working on translating MoodleTM into local languages (Jamtsho, Rinchen et al. 2010a). Further, under the Swedish Aid initiative on "Free and Open Online Education", UCSC is providing online courses on ICT literacy in

local languages. Under the Sri Lankan government's e-SriLanka initiative, websites of government departments are made available in all three languages. Furthermore as discussed in Chapter 5, through the Government Information Centre the public can request information in all three languages. Even though these are commendable initiatives, the lack of access to the wealth of resources and knowledge available in foreign languages is a major issue that is unlikely to be overcome in the near future.

12 Conclusions and Recommendations

12.1 Introduction

This final chapter draws conclusions from the research findings in comparison with issues discussed in the literature review. It presents recommendations based on the research findings, categorizing them under the same themes used to present the findings, namely: quality assurance, access to resources, location, digital literacy and language. Reflections on the research process and learning outcomes are discussed, along with a discussion of limitations of the research and areas for further work. Finally, contributions made to the body of knowledge are discussed.

12.2 Conclusions

ICTs were introduced to distance education (DE) by the Sri Lankan government with the expectation of reducing costs, increasing and widening participation in higher education (HE), and improving the quality and relevance of DE programmes. The Distance Education Modernization Project (DEMP) was the main mechanism of this effort. The DEMP persuaded traditional single-mode universities to offer DE programmes using ICTs, either fully-online, or supplementing print-based distance delivery. Orange Valley University's (OVU) DE course would not have been created if not for this provision.

While many students positively welcomed the effort to introduce ICTs into DE, some felt threatened mainly due to their lack of financial ability to afford equipment, services and higher course fees. The ICT-enabled DE programmes have been less successful than expected due to many reasons.

Limited access to resources is a main issue that hindered participation in ICT-enabled DE programmes. Infrastructural limitations varying from poor connection speeds and reliability to areas with no connectivity, restricted access to these programmes, while unreliable electric power supplies posed major threats to the use of expensive equipment. This confirms the views expressed by Perraton (2000), Bates (2005) and Zhang (2005), emphasising the importance of 'access' in selecting appropriate technology for DE delivery as discussed in Chapter 4. Access centres were less successful than predicted in providing access to students due to restrictions on accessing websites and excessive bureaucracy practised by staff who

lacked the knowledge and awareness to support learners. Thus it can be concluded that at the moment Sri Lanka lacks the infrastructural capability to support access to online learning for a sizeable proportion of its population.

Residential location was an important contributor towards an individual's ability to access resources, as it related closely to the issue of infrastructure. From the population demographics it can be concluded that already disadvantaged groups living in the estate sector did not benefit from the OVU's DE programme, while it also had little benefit for communities living away from cities. However, for people from cities and their immediate conurbations, especially in Colombo, ICT-enabled DE programmes provided access to a HE which otherwise would not have been possible. Thus it can be concluded that even though the initiative failed to widen access, it did achieve increased access.

Whilst the majority of students who remained on the programmes were those who were digitally literate, many others who lacked digital literacy experienced problems. It can be concluded that despite the initiatives to increase digital literacy, Sri Lanka has yet to achieve sufficient levels of digital literacy to be able to offer ICT-enabled DE programmes to a sizeable proportion of its population. This is closely linked with the fact that very little content and few programmes are available in local languages, making it even more difficult to gain full access to ICT-enabled DE for a large majority of the population who are only competent in local languages. Issues related to location, language, digital skills and access to resources provide comprehensive evidence to support the multifaceted nature of the Digital Divide as characterised by Norris (2001), van Dijk and Hacker (2003), Warschauer (2003) and van Dijk (2005), and lead to the conclusion that there is a strong presence of digital inequality in the country.

More than a half of the students of the OVU programme chose to attend a HE course while employed. This validates Castells' (2000a) view that education is the critical resource that adds value to labour in the knowledge economy (KE). The use of discussion forums (albeit when they were compulsory or carried marks), web resources, online quizzes, social networking sites and communication tools such as email, telephone, SkypeTM and online chat by students for learning purposes, leads to the conclusion that students did benefit from the introduction of ICTs for their programmes.

Although over time ICT-enabled DE programmes can be cheaper than in-person programmes, they may require equivalent upfront investment to start with, particularly in terms of pedagogical infrastructure.

Problems in quality assurance that emerged in the study raised significant concerns about the use of ICT in DE in its present state. Pedagogical issues together with the lack of professionalism, and the limited competency of educators, support the conclusion that the current state of staff knowledge, awareness and experience is not sufficient to facilitate online learning at the OVU. It can also be concluded that both OVU and Yellow Fields University (YFU) students lacked awareness of the seriousness of plagiarism. Taken together, all these factors provide sufficient evidence to show that the current state of ICT-enabled DE programmes failed to improve quality, especially in the case of the OVU.

Students who possessed the necessary ICT resources, digital skills, good English ability, self-study skills and motivation remained in the OVU programme, while supplementary online and blended online programmes at the YFU retained a more varied group with a range of levels of competencies. This together with students' strong preference for face-to-face learning and tutor/lecturer interaction show that a mixed method of DE delivery is a better approach for broadening participation to the rural and estate areas in Sri Lanka. Increased participation could be provided by ICT-based DE for the urban population, provided that it was better targeted and that training in the use of the technology was provided for those that needed it as well as entry requirements of sufficient resources (PC and home Internet access).

A majority of the students owned computers and had Internet access, in a country where only a fraction of people have access to these resources; many student households earned more than the country's median household income, and the majority of students being Western Province dwellers where only 28% of Sri Lankans reside, supports the conclusion that these programmes are attended mainly by already privileged groups, validating the views expressed by van Dijk (2005) and Norris (2001) that digital technologies benefits people already possessing resources (Chapter 5), and Carr-Chellman's (2005b) and Zhang's (2005) view that online education may increase the already existing inequalities (Chapter 4).

In 2010, the OVU announced the discontinuation of its online DE programme, which was often cited as one of the most successful programmes offered under the DEMP. Personal communications revealed that the decision was partially based on financial grounds, showing the grave errors made in planning the DEMP cashflow by over-estimating students' ability to pay for NODES services. It also shows that in this instance the benefits of the programme were outweighed by its drawbacks as has been revealed in this study.

Many of the findings of this research have been confirmed by the Asian Development Bank (ADB), who found the DEMP to be 'highly relevant' to Sri Lanka's strategies and vision but admitted that the project had been 'less effective', 'less efficient' and 'less likely sustainable'.

The project is rated *less effective* in achieving the outcome of developing distance education to expand postsecondary school enrollment and help develop a modern, highly skilled population. While the project succeeded in creating an impressive platform for ICTbased [sic] postsecondary distance education, unless it is utilized more widely and optimally, it is likely that necessary investments into hardware and software upgrades will not occur, making the system obsolete and irrelevant within a few years [...] The project is rated *less efficient*. [...] Certainly, the project has the potential, at a low investment, to extend access to postsecondary education to a large number of students that are unable to enter traditional education systems. As it stands, the project facilities need to attract a larger number of students to become fully viable [...]; the courses are not cost-effective and the course fees set by the partner institutions have increased because of the fees payable to NODES [...]. [T]he rate of return envisaged at appraisal is not likely to be achieved because of these reasons, and especially because there are fewer project beneficiaries than projected and thus fewer graduates [original emphasis] (Asian Development Bank 2011, p10).

This completion report also confirmed the findings of the research that there were fewer students enrolling in programmes due to costly course fees, in turn caused by the high fees charged by NODES, affecting the sustainability of the project. It shows that the quality assurance targets have been achieved because the project delivered the document "National Assessment and Accreditation Policy for Distance Higher Education" that also gained international acceptance by the Commonwealth of Learning (Rama and Hope 2009). But this research has shown serious flaws regarding quality in the implementation of ICT-enabled DE programmes. The ADB's interpretation of sustainability is largely based on monetary terms, while the educational perspective of sustainability also focuses on the quality of the programme to service the students' needs and needs of the economy. If the qualifications

gained are not recognized due to poor quality, this can result in fewer enrolments, leading to a vicious cycle that undermines sustainability.

In addition to these findings of the ADB, this project, which was an in-depth case study, identified further issues that need to be addressed such as quality assurance, language, access to resources, location and digital literacy.

12.3 Recommendations

12.3.1 Quality Assurance

12.3.1.1 Materials

- It is recommended that a quality control mechanism that would employ internal and/or external reviewers to monitor the quality of materials before they are uploaded to NODES servers be implemented.
- The Ministry of Higher Education should make it mandatory for the DEMP to provide periodical reports on student satisfaction surveys.
- It should be mandatory for each institution offering programmes under the DEMP to provide an introductory session to all registered students demonstrating the use of the virtual learning platform (such as MoodleTM) that will be utilized in the programme delivery.

12.3.1.2 Communications

- A tracking system (such as JIRA[®] - <http://www.atlassian.com/software/jira/>) should be implemented to track queries initiated by students. This system should be centrally monitored to ensure that the agreed level of service (for example, a reply or an update within 3 working days) is offered to distance students.
- Programmes should publish not only the assignment due dates but also when feedback or marks for the assignments can be expected. All staff should be advised to work towards achieving these targets.

12.3.1.3 Staff

- NAC Staff should be provided with appropriate training and a handbook outlining the policies and procedures. They should have access to a central service in order to clarify issues, and the issues raised by NAC staff should be documented and addressed in future training programmes.
- It is recommended that individuals of high calibre should be recruited and trained to fill tutor positions. Their training programme should include at least one online course. The training should also introduce best practices and case studies.
- Lecturers of conventional universities who wish to engage in DE should be required to undergo training on the principles and practices of DE. This training should emphasise the importance of professional conduct and should also introduce best practices. Appropriate sections of the DEMP student satisfaction survey and the communication report (recommended in 12.3.1.1) should be made available to lecturers as a mechanism of feedback.

12.3.2 Access to Resources

- The operational practices of NACs should be reviewed, and a more student-friendly service considered, as well as a uniform code of practice for all centres developed. Information leaflets with instructions, for example login processes and equipment operation (such as photocopiers) should be made available at NACs.
- Investigating the possibility of utilizing existing resources of state universities (such as computer labs) during vacations and after hours is recommended.
- Introducing e-resource library for online learners is recommended.
- It is recommended that easy payment schemes and loan schemes be introduced to finance purchasing of computers and Internet connections for students enrolled on DE programmes.
- It is recommended that a telecommunication infrastructure is set up in all rural areas to support access to Internet; this could be achieved by making operating licences conditional on serving rural areas.

- It is also recommended that a ceiling for charges on Internet access and printing be introduced.
- An investigating of voltage fluctuations in order to take corrective actions and a review of maintenance practices and electricity prices are recommended.

12.3.3 Location

- Prioritization of the development of transportation and data networks to service rural communities is recommended.

12.3.4 Digital Literacy

- Programmes for increasing digital literacy targeting pupils, teachers and university students should be prioritized.
- It is recommended that existing telecenters (including NACs) conduct digital literacy programmes for the communities they are serving.

12.3.5 Language

- The creation of meaningful content in local languages is essential to attract locals to use computers and the Internet. It is recommended that student projects be promoted and competitions held to encourage local language content creation.
- Emphasizing the importance of English as a second language and allocating resources to rural schools is recommended as a long-term solution in promoting digital resource use.

12.4 Reflections

The research project initially started with the ambitious aim of comparing the acceptance of a DE degree by employers in Sri Lanka and in the UK. However, as time passed and through participation in the Research Methods Programme (conducted by the Graduate School of the University of Reading) the researcher realized that the best way to utilize her skills and strengths within the time and resource constraints would be to concentrate on a research project focusing on an under-researched area of DE in Sri Lanka, resulting in the conception of the project idea.

One important lesson learned on this journey is the value of personal contacts and relationships. The initial plan to study three cases had to be revised as the researcher was unable to gain access to one research setting. However, personal contacts in the other two research settings enabled access to data sources that would otherwise have been impossible.

Another striking realization was the importance of quality Internet connectivity for research purposes; that is our dependency on it as a resource. Although the researcher possessed an ADSL connection (which most Sri Lankans aspire to) the speed of the connection was unsatisfactory. An attempt to familiarize herself with SecondLife[®] was abandoned as the response times were unacceptable. Skype[™] meetings conducted with her supervisors in the UK had to be supported with instant messaging as the voice quality was poor.

The importance of health and wellbeing is another learning point of this research journey. By committing to an appointment with a distinguished figure of Sri Lankan DE while recovering from a previous infection, the researcher compromised her health and faced serious repercussions. However, the researcher has no regrets because had she lost that opportunity there would not have been another for her to meet this key person, who lives overseas.

The researcher faced many challenges during the data collection in Sri Lanka. Conducting interviews was a challenge because Sri Lankans in general do not abide by time commitments. In interviewing educational authorities the researcher was bombarded with issues that Walford (1994) had described in “Researching the Powerful in Education”; but her awareness and preparation helped her to successfully tackle such instances. As in many other developing countries, travelling took up large amounts of time; for example, travelling 72 miles from Galle to Colombo using public transport on a weekday generally took between 3 and 3.5 hours. Many of the authorities expected the researcher to meet them face-to-face regularly to discuss matters that could easily have been resolved by email or telephone; thus the researcher had to travel back and forth, in some instances just to obtain an appointment. Working with a limited budget on her own during the data collection period meant that often the researcher had to work long hours either printing questionnaires on a domestic printer that did not support duplex printing, transcribing interviews in Sinhala with an unfamiliar “Wijesekara” keyboard layout, or entering questionnaire data into spreadsheets. However,

ultimately this enabled her to have a better feel for the data as she was immersed in every step.

As the research progressed, a change in personal circumstances resulted in the researcher taking a year off while on data collection in Sri Lanka. This break in the middle of data collection did disrupt the flow but it nevertheless provided additional time to think, reflect and plan the remaining part of the data collection. Returning from maternity leave, the researcher had the most challenging task of balancing her personal duties and work duties. This exercise allowed her to realize the dedication and stamina she possessed and increased her self-confidence. Despite difficult times she managed to progress in her research and was nominated to participate in the University's Women in Research project, which focused on celebrating women in research who provided good female role models.

There are three main things that the researcher could have done differently had she had the knowledge she possesses now with respect to the research setting. Firstly, had the researcher lived in Colombo during the data collection period it would have saved a considerable amount of time spent in transit, time that could have been used more productively. However, with the limited budget it was not feasible to rent accommodation in Colombo. Living in Galle with her parents not only saved accommodation costs but also time and resources that would otherwise have been spent on childcare and domestic duties. The "Southern Expressway" linking Galle and Kottawa (near Colombo), which was under construction at the time of data collection, was opened on 27th November 2011 reducing travel time between Galle and Colombo to just above 1 hour.

Secondly, the researcher did not plan to visit NODES centres or interview NODES staff as part of her research. Had she possessed the knowledge of issues faced by students using NACs she would have included NODES staff also in her sample. By the time the issues of NACs surfaced it was too late to obtain permission as the system was highly bureaucratic. It is worth noting here that the researcher's letters requesting an interview with the same authority went unanswered; only through the intervention of another powerful figure in Sri Lankan HE, who was genuinely interested in the research, was access granted. Thus it is possible that access would not have been granted even if permission had been sought earlier.

Thirdly, while analysing the data the researcher identified the usefulness of more background data (such as the number of credits taken per semester) had this been collected. In some interviews it was revealed that students regarded their study as part-time, even though they were taking the equivalent credits to full-time study. The part-time full-time distinction for them was based on the fact that they were employed full-time while studying. However it was not possible to further analyse these claims as the data for such analysis was not collected. On the other hand, it must also be acknowledged that the questionnaire was already 7 pages in length and a further increase in the length could have affected the response rate.

12.5 Limitations and Further Work

The research concentrated on two universities that offered DE degrees using ICTs. Therefore, generalizations about the whole state university DE system in Sri Lanka cannot be made. However, there is now a basis for understanding the contemporary situation of the Sri Lankan state university DE system with regard to the use of ICTs for delivery, thus providing a basis for possible prediction. Similar research can be undertaken in the future in other settings to extend this knowledge. Similarly research in other developing countries would enable comparative studies that would inform regional policies and donor agencies.

In each case study students who remained in the study programme were the participants. This limits the insight into issues that were faced by students who initially registered but dropped out later on. It should also be acknowledged that the study sample was mostly Sinhalese speakers. Many small-scale research studies with limited time and resources face similar issues of not being able to identify problems faced by non-participants. A larger study in the future could focus on not only the drop-outs but also on potential students in order to obtain a more holistic view.

This research revealed that students registered for online programmes due to previous lack of opportunity to engage in HE. However, the data were not sufficient to tease out whether it would be in-person part-time programmes, online part-time programmes or another form of study that would best serve this target group. This would be an interesting avenue to explore in further work.

The research has shown a gender difference in the frequency of use of computers, but possible causes for this observation were not explored. This area of research would be important to pursue in examining equality in access and certainly would be an area for further inquiry.

Initial investigations on student ambitions suggested that the majority of students were seeking postgraduate degrees, while a minority was interested in overseas employment and migration. Advancing this line of investigation would allow a better understanding of the potential for a brain drain from Sri Lanka, an important political debate.

12.6 Contribution to Knowledge

As discussed earlier in Chapter 7, there has been no official analysis of the impact of study programmes introduced under the DEMP; thus this project is one of the first to examine the implementation issues of ICT-enabled DE programmes, especially comparing two cases where one is an established DE provider and the other has only recently ventured into DE.

The methodology used in this research establishes the applicability of multiple case studies using an ethnographic approach in the Sri Lankan DE system. It also demonstrates its appropriateness to research the experiences of distant students.

The research established that ICT-enabled programmes are appealing to a segment of the population who are already privileged. As discussed in Chapter 10 the other study (Liyanage 2009) that observed NODES programmes considered monthly income of the respondent (the student) if they were employed; thus does not provide sufficient data to argue that the programmes were especially appealing to specific income groups because many Sri Lankan students depend on parental income until they find employment (after graduation). Because this research used household income as a variable, the data can be compared with average and median household incomes of the country to provide an accurate broader interpretation. Thus this research provides a unique contribution by showing that students from affluent families are the major recipients of ICT-enhanced educational delivery.

Establishing that the OVU external students were denied library facilities when educational authorities were envisioning resource-sharing for maximum benefit was another important contribution of the study, which shed light on the ‘implementation gap’ that was not reported

elsewhere. This study is also one of the first to show the shortcomings of the OVU DE programme, which was generally accepted to be a good programme offered under the DEMP; however entry to the online programme has been discontinued since.

The research has showed how important social interaction is for distance learning students in Sri Lanka, thus validating Vygotsky's perspective on learning development centred on the importance of social interaction in the teaching and learning context. It also demonstrated the importance of mixed method delivery in Sri Lanka to introduce learners to other learners who then supported each other, possibly reducing the dropout rates.

The research further contributed to the body of knowledge by demonstrating the importance of staff training and preparation for distance educational practices when they are moving from a traditional educational environment to DE.

In conclusion, this research has shown that although ICT-enabled DE has the potential to increase access to HE, the present implementation of the system in Sri Lanka has been less than successful because of the lack of coordination; the lack of well trained teachers, especially contributing to the lack of quality materials; an inadequate infrastructure, especially with respect to divides between urban and rural areas; the lack of digital literacy and knowledge of English; and the lack of disposable income to afford ICT equipment and connectivity. Unless Sri Lanka addresses these issues effectively through a systematic policy, it compromises its ability to be a full participant in the highly competitive KE of the 21st century era of globalization.

13References

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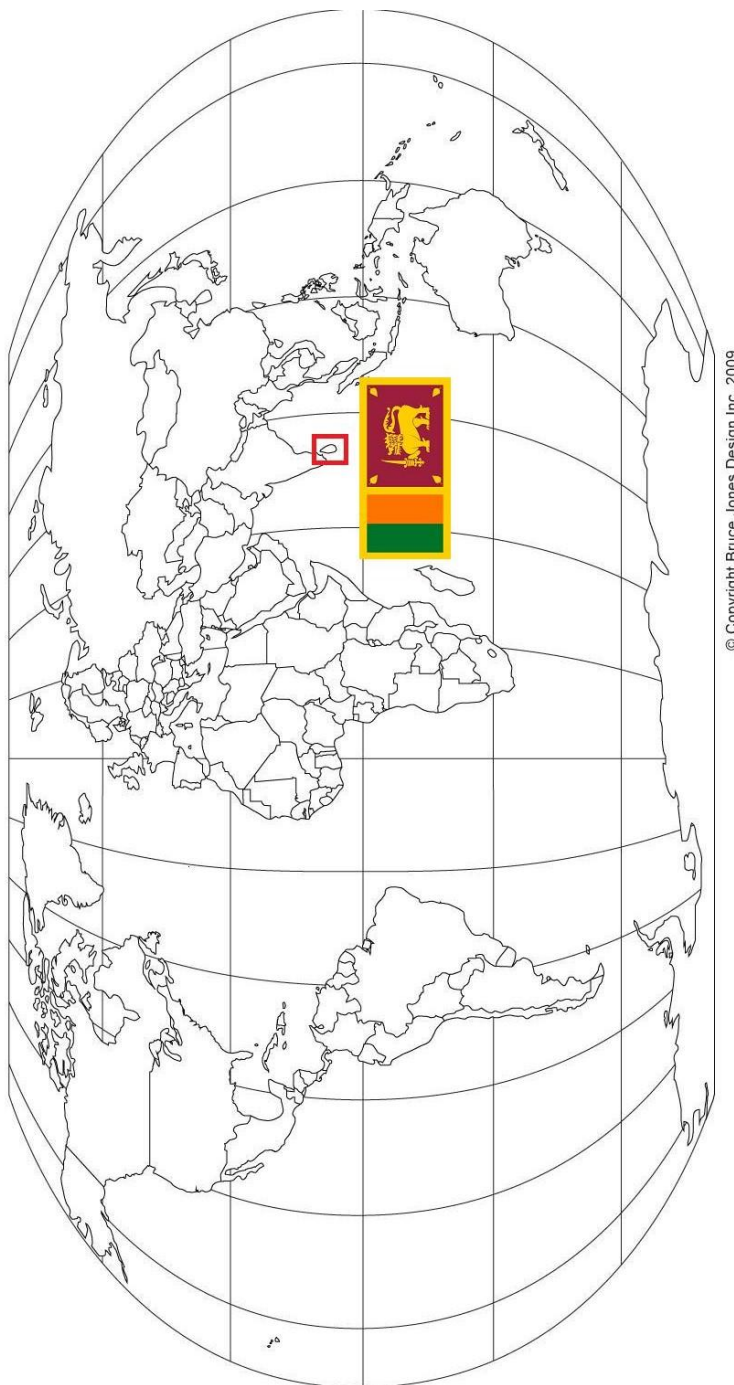
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Appendix - A Sri Lanka in the World Map

Sri Lanka in the World Map

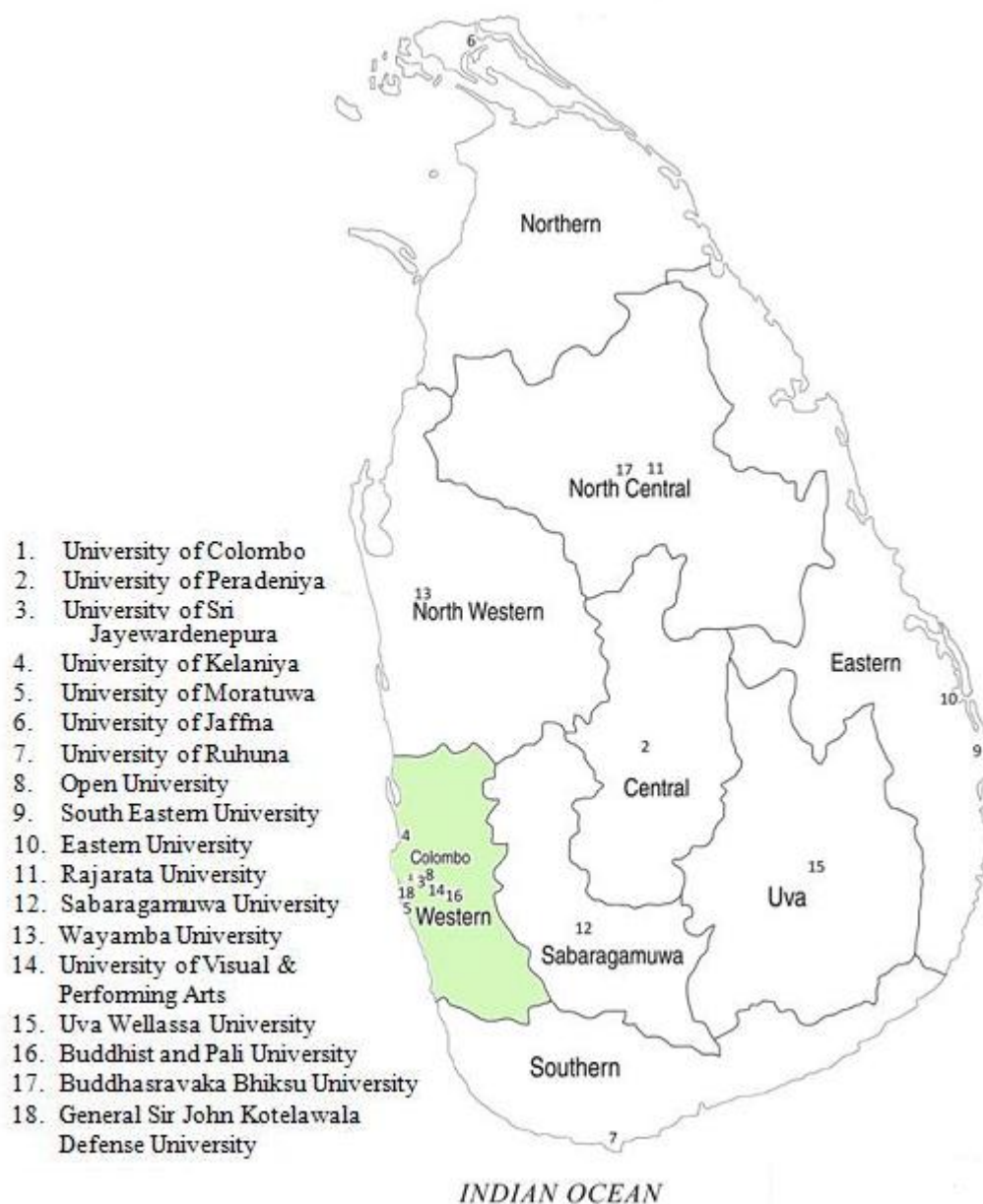


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Appendix - B Administrative Districts



Appendix - C State Universities



Appendix - D Information Sheet – English

Research Ethics Committee



The Impact of ICTs on Distance Education Programs

Project Description

This research is conducted to explore the impact of information and communication technologies (ICT) on distance educational undergraduate programs in Sri Lankan State Universities. Research is hoped to grant a better understanding of contemporary situation in Sri Lanka with respect to ICT enhanced distance education programs by amalgamating policy developers', implementers' and users' perspectives. Hence, it is expected that this research outcomes would benefit future policy developments in higher education.

The research is conducted by Ms. Tharindu Liyanagunawardena for the fulfilment of a higher degree requirement at University of Reading, UK.

Semi-structured interviews, questionnaires, written accounts and group discussions are employed to gather data from respondents volunteered to participate in the research project. Interviews and discussions (half an hour to 1 hour) will be audio-recorded with permission, in order to analyze it at a later date. Participation in this research is voluntary and withdrawal can be made at any stage. Personal details of the participants will only be kept as necessary by researcher to ensure compatibility of the samples and will not form part of any disseminated information. Information gathered will only be used for academic research purpose and any publications stemming from it. All information provided will be kept strictly confidential. The storage and disposal of the collected information will be handled according to the University procedures.

Final results of the research could be made available to interested parties using electronic format.

If you are interested your name will be entered into a prize draw and you could win Rs. 2500/= cash.

This application has been reviewed by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct.

Tharindu Rekha Liyanagunawardena

School of Systems Engineering
University of Reading
Whitenights
Reading
RG6 6AY
England
00 44 7505770766
t.r.liyanagunawardena@reading.ac.uk

Bibulegoda Estate
Kapuhenpola Road
Akmeemana
Galle 80 000
Sri Lanka
00 94 718690149
tharindu.rekha@gmail.com

Appendix - E Information Sheet – Sinhala

Research Ethics Committee



තොරතුරු හා සන්නිවේදන තාක්ෂණය භාවිතාකර සිදුකරන ශ්‍රී ලාංකීය දුරස්ථ අධ්‍යාපනය පිළිබඳ පර්යේෂණය

අධ්‍යනය පිළිබඳ විස්තර

තොරතුරු හා සන්නිවේදන තාක්ෂණය ලාංකීය රාජ්‍ය විශ්ව විද්‍යාලවල දුරස්ථ අධ්‍යාපනයට උපකාරී වන ආකාරය පිළිබඳව මෙම අධ්‍යනය සිදුකෙරේ. මෙම අධ්‍යනයේ ප්‍රතිඵල මගින් වර්තමාන තත්ත්වය අවබෝධ කරගැනීමටත්, අනාගත අධ්‍යාපන ප්‍රතිපත්ති සම්පාදනයට රුකුලක් දීමටත් හැකිවනු ඇති බව අපේ විශ්වාසයයි. ප්‍රතිපත්ති සම්පාදන, ප්‍රතිපත්ති ක්‍රියාත්මක කිරීමේ ආයතනවල මෙන්ම, අධ්‍යාපනය ලබන සිසුන්ගේ සහ කළමනාකරුවන්ගේ අත්දැකීම් එක්කර කිරීමට මෙම අධ්‍යනයෙන් උත්සහ කෙරේ.

මෙම අධ්‍යනය, තරිඳු රේඛා ලියනගුණවර්ධන විසින් එක්සත් රාජ්‍යයේ රෙඩින් විශ්ව විද්‍යාලයේ උසස් අධ්‍යාපන පුද්ගලික සපුරාලීම සඳහා සිදුකරනු ලබයි.

ප්‍රශ්නාවලි, සම්මුඛ සාකච්ඡා, ලිපි සහ සමූහ සාකච්ඡා අධ්‍යයන සඳහා භාවිත කරන අතර ලබාගන්නා තොරතුරු රහසිගතව තබා ගැනේ. සාකච්ඡා (පැය හතරක - පැයක් පමණ) ඔබේ අවසරය මත පවත්වනු ලබයි. සහභාගිවීම ස්වේච්ඡාවෙන් වන අතර අධ්‍යයනය අතරතුර දී ඉවත්වීමටද ඉඩ ඇත. ඔබේ පෞද්ගලික තොරතුරු ආදර්ශනයේ (සාම්පලයේ) අනුකූලතාව සඳහා පමණක් වේ. ලබාගන්නා තොරතුරු අධ්‍යාපන කටයුතු සඳහාත් අධ්‍යාපනික පළකිරීම් සඳහාත් පමණක් භාවිත කෙරේ. තොරතුරු සියල්ලක්ම විශ්ව විද්‍යාලයේ ක්‍රියා පටිපාටියට අනුකූලව තබා ගැනේ.

අධ්‍යනයේ අවසන් ප්‍රතිඵල දැනගැනීමට කැමති පාර්ශ්වයන්ට එය ලබාදීමට බලාපොරොත්තු වෙමු.

ඔබ කැමති නම්, රු.2500/= ක් දිනාගැනීමේ අවස්ථාව උදාකරන ලොතරැය සඳහා ඔබේ නම ඇතුළත් කළ හැක.

මෙම අධ්‍යනයට විශ්ව විද්‍යාලයේ ආචාරධර්ම කමිටුවේ අනුමැතිය ලබා දී තිබේ.

තරිඳු රේඛා ලියනගුණවර්ධන

ස්කූල් ඔෆ් සිස්ටම්ස් ඉංජිනියරින්
රෙඩින් විශ්ව විද්‍යාලය
වයිට්නයිට්ස්
රෙඩින්
RG6 6AY
එක්සත් රාජ්‍යය
00 44 7505770766
t.r.liyanagunawardena@reading.ac.uk

බ්‍රිච්ලේගොඩ වත්ත
කපුතෙම්පල පාර
අක්මිමන
ගාල්ල
ශ්‍රී ලංකාව
00 94 718690149
tharindu.rekha@gmail.com

Appendix - F Consent Form – English

Research Ethics Committee



Consent Form

1. I have read and had explained to me by *Tharindu Ltyanagunawardena* the accompanying Information Sheet relating to the project on *the Impact of ICTs on Distance Education Programs in Sri Lanka*.
2. I have had explained to me the purposes of the project and what will be required of me, and any questions I have had have been answered to my satisfaction. I agree to the arrangements described in the Information Sheet in so far as they relate to my participation.
3. I understand that participation is entirely voluntary and that I have the right to withdraw from the project any time, and that this will be without detriment to any care or services I may be receiving or may receive in the future.
4. This application has been reviewed by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct.
5. I have received a copy of this Consent form and of the accompanying Information Sheet.

Name:

Address:

Signed:

Date:

Appendix - G Consent Form – Sinhala

Research Ethics Committee



එකඟත්වය ප්‍රකාශකිරීම

1. මේ සමග වූ තොරතුරු හා සන්නිවේදන තාක්ෂණය භාවිතාකර සිදුකරන ශ්‍රී ලාංකීය දුරස්ථ අධ්‍යාපනය පිළිබඳ පර්යේෂණයේ තොරතුරු පත්‍රිකාව මා කියවූ අතර අවශ්‍ය පැහැදිලි කිරීම් තරිඳු රේඛා ලියනගුණවර්ධන විසින් කරන ලදී.
2. මට සෑහීමකට පත්විය හැකි මට්ටමින්, මගේ ගැටළු වලට පිළිතුරු හා අවශ්‍ය පැහැදිලි කිරීම් ලබා දුන් අතර තොරතුරු පත්‍රිකාවේ සඳහන් මට අදාළ දෑට මගේ එකඟත්වය ප්‍රකාශ කරමි.
3. සහභාගිවීම ස්වේච්ඡාවෙන් වන බවත් අධ්‍යයනය අතරතුරදී ඉවත්වීමට ඉඩ හැකියාව ඇති බවත් මම දනිමි. එසේ ඉවත් වීමෙන් අනාගතයේ කිසිදු සේවාවක් ලබා ගැනීමට හානියක් නැති බවද දනිමි.
4. මෙම අධ්‍යයනයට විශ්ව විද්‍යාලයේ ආචාරධර්ම කමිටුවේ අනුමැතිය ලබා දී තිබේ.
5. මෙම තොරතුරු පත්‍රිකාවේ සහ එකඟත්වය පලකිරීමේ පත්‍රිකාවේ පිටපත් මට ලැබුනි.

නම:

ලිපිනය:

අත්සන:

දිනය:

Appendix - H Sample Invitation Letter

The Vice Chancellor,
[REDACTED]

Tharindu Rekha Liyanagunawardena,
School of Systems Engineering,
University of Reading,
Whitenights,
RG6 6AY,
UK

01st July 2009

Dear Prof. [REDACTED]

Seeking permission to study [REDACTED] as a case in the PhD research project

I am Tharindu Liyanagunawardena a student from University of Reading interested in researching about the impact of ICTs on Distance Education in Sri Lanka. I wrote to you earlier regarding the same and your encouraging email was a great strength for me.

My research is hoped to grant a better understanding of contemporary situation in Sri Lanka with respect to ICT enhanced distance education programs by amalgamating policy developers', implementers' and users' perspectives.

My application has been reviewed by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct. I have been waiting to contact you officially until I gained the University Research Ethics Committee approval. Herewith I am enclosing a short Project Description [Information Sheet].

The commitment I would require from the University would be to interview several staff members (maximum 10), to interview several students (maximum 15), advertise my research project for recruiting participants, to allow me access to details of ICT resource usage, and characteristics of students gaining access to Higher Education through the [REDACTED] courses. I can guarantee that my research work would not disturb staff members or any other function at [REDACTED].

I am sending this request through my supervisors Dr. Andrew Adams from the School of Systems Engineering and Prof. Naz Rassool from the Institutes of Education, University of Reading.

A research project on Sri Lankan Distance Education without considering [REDACTED] in Distance Education in Sri Lanka, would be of little significance as it is [REDACTED] provider of Distance Education in the country. Hence, [REDACTED] as a case study is really important for my research project and my future career. I do hope you would consider my request favourably.

Many thanks in advance,

Yours Sincerely

Tharindu Liyanagunawardena

Appendix - I Supporting Supervisory Letter




The Vice Chancellor



School of Systems Engineering
The University of Reading
P O Box 225
Whiteknights
Reading
RG6 6AY
United Kingdom
T:+44-118-378-6997
F:+44-118-975-1822
E:A.A.Adams@Rdg.ac.uk

July 3, 2009

Dear Prof. 

Please find attached a letter from our PhD student, Mrs Tharindu Liyanagunawardena, who is studying the use of ICT in distance higher education in Sri Lanka for her PhD at the University of Reading. As you can see from her letter, her research will cover a broad spread of stakeholders in this field, from government policymakers to university staff and students. As a very successful provider of distance education in Sri Lanka, we are hoping that you and your staff will be able to provide her with the assistance she is requesting. The results of her research will of course be made publicly available, and we hope that they will be of interest and use to your organisation.

Yours faithfully,

A handwritten signature in black ink, appearing to read "A.A. Adams".

Dr Andrew A. Adams
(School of Systems Engineering)

A handwritten signature in black ink, appearing to read "Prof Naz Rassool".

Prof Naz Rassool
(Institute of Education)

Appendix - J Student Details Request Sheet

I am interested in taking part in the study "Impact of ICT on Distance Education in Sri Lanka"

	First Name	Email Address	Telephone No	Signature
1	[Redacted]	[Redacted]	[Redacted]	[Signature]
2	[Redacted]	[Redacted]	[Redacted]	[Redacted]
3	[Redacted]	[Redacted]	[Redacted]	[Redacted]
4	[Redacted]	[Redacted]	[Redacted]	[Redacted]
5	[Redacted]	[Redacted]	[Redacted]	[Redacted]
6	[Redacted]	[Redacted]	[Redacted]	[Redacted]
7	[Redacted]	[Redacted]	[Redacted]	[Redacted]
8	[Redacted]	[Redacted]	[Redacted]	[Redacted]
9	[Redacted]	[Redacted]	[Redacted]	[Redacted]
10	[Redacted]	[Redacted]	[Redacted]	[Redacted]
11	[Redacted]	[Redacted]	[Redacted]	[Redacted]
12	[Redacted]	[Redacted]	[Redacted]	[Redacted]
13	[Redacted]	[Redacted]	[Redacted]	[Redacted]
14	[Redacted]	[Redacted]	[Redacted]	[Redacted]
15	[Redacted]	[Redacted]	[Redacted]	[Redacted]
16	[Redacted]	[Redacted]	[Redacted]	[Redacted]

Appendix - K Sample Interview Guide – Student

1. Increasingly universities use ICTs for learning programmes. Why do you think ICT is introduced this way? (for discussion: cost cutting; make learning material available 24/7; to be abreast with the rest of the world; to enhance student experience; quality; pass costs to students; to reach disadvantaged students in rural areas, the poor, disabled, other)
2. Do you think use of ICT is important for higher education? Why?
3. Course materials can be made available anywhere anytime using technology. For example, course material on Moodle™ is accessible any time anywhere as long as you can connect to the Internet. Is this important for you? Why?
4. What are your thoughts on the use of technology and costs?
5. What are your thoughts on online discussion forums?
6. It is believed that people with disabilities and people living in rural areas will benefit from the introduction of ICT to HE especially to Distance Education programmes, because now they will be able to access course material without coming to the university. What are your thoughts on this?
7. Can you briefly describe the experience you had with the Learning management System?
8. What do you think the most useful purpose of ICTs for learning?
9. Have you or your friends have encountered any problems with the use of ICTs? (ownership of computers, Internet access)
10. What are the purposes you use computers and the Internet? (Entertainment, find information, educational purposes, relaxation, communication)

Appendix - L Student Questionnaire – English



Information and Communication Technologies (ICTs) in External Degree Programmes

We are conducting research on the impact of Information and Communication Technologies (ICT) on Distance Education Programs in Sri Lanka. Since you are a student from an External Degree program of a State University, we invite you to take part in our research project.

As you are already aware, there are many students willing to enrol in university degrees who do not have the opportunity due to a lack of capacity in State Universities. Your participation in this project will help us to understand the implications of the use of ICTs in External Degree Programs which should assist future developments in distance education programs, and allow more students to benefit. Therefore, we ask that you take few minutes of your time to respond to us.

Questionnaires and interviews are used to collect data in this project and all data collected will be kept strictly confidential. If you would like to take part in a short interview (30-40min) to help our project, please give us your contact details. We will contact you to arrange a suitable time for you. If interested, interview participants' names will be entered into a prize draw and you could win Rs. 2500/= cash.

This research project has been reviewed by the University of Reading Research Ethics Committee.

We thank you for taking time to respond to our questionnaire.

Ms. Tharindu Liyanagunawardena

Bibulegoda Estate, Kapuhempola Road, Akmeemana, Galle

0718690149

tharindu.rekha@gmail.com

For the purpose of this study ICT is defined as the information and communication technologies used for teaching and learning in higher education. For example, educational programs on the television and radio; educational programs on CDs; use of the Internet for educational purpose; use of a Learning Management System such as Moodle; recorded lectures; use of telephone, SMS, email and fax as communication media for educational purposes are all considered as ICTs.

Section 1 – Degree Program Details

1. University: / Other (please specify)
2. Name of Degree Program:
3. Year of study: 1st Year / 2nd Year / 3rd Year /
4. Here are some common reasons for selecting external degree programs. Please rate each statement based on how agreeable it is for you using the following scale. For example, if you think the statement is completely agreeable, please tick (✓) 'very strongly agree'; if you think the statement is not agreeable at all, please tick 'very strongly disagree'. If however you think it is somewhere in between, then please tick the one that best describes how agreeable it is to you.

	very strongly agree	strongly agree	agree	disagree	strongly disagree	very strongly disagree
a. I did not get my preferred course at the course selection						
b. I did not get my preferred university at the university selection	I					
c. The fees for this course is affordable						
d. I wanted a part time course that can accommodate my other commitments						
e. I wanted to study independently in my own time						
f. Difficulty / an unwillingness to attend regular classes						
g. There is a regional centre/ private tuition class that supports learners						
h. I do this course partly or wholly because of the use of ICTs in teaching						
i. I won a scholarship that covers my course fees for this course						
j. Other (please specify)						

5. Does your course offer face to face learning sessions? Yes / No
If "yes" how often?
6. Do you attend any private tuition (extra classes) to prepare for this course? Yes / No
7. If "Yes" why do you think these classes are required?

If there was no private tuition (extra classes) supporting your program, would you have still considered registering for this program? Yes / No

Section 2 – Use of ICT in Programs and Your Views

1. My course uses (select all that apply)

a. Regular TV Programs	
b. Regular Radio Programs	
c. Face to Face classes	
d. Printed Notes and Handouts	
e. Dedicated Learning Management System(Moodle)	

f. CD with all content	
g. Audio/ Video cassettes	
h. Dedicated Website	
i. Discussion forums (online discussions)	
j. email communication for notices, assignment submissions, etc	

2. Universities increasingly are using ICTs to deliver/enhance their learning programs. Why do you think ICT is introduced this way? The following are some commonly stated reasons. Please rate each statement based on how agreeable it is to you using the following scale.

	Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagree	Very strongest disagree
a. Cost cutting						
b. Make learning materials available 24hours a day and 7 days a week						
c. To be abreast with the rest of the world						
d. To enhance the quality of the course						
e. To enhance student experience (for example, creating a community of learners with online discussion forums)						
f. To reach disadvantaged students (for example, students in rural areas and disabled who find it difficult to attend classes)						
g. Other: please specify						

3. Course materials can be made available **anywhere** (accessing them from the university, at home, even when you are in another country etc) and **any time** (accessing them during working hours or even in the night) using technology. For example, course material on a Learning Management System such as Moodle is accessible any time anywhere as long as you can connect to the Internet.

- a. Do you think it is essential to have **anytime** access to course materials using ICTs such as recorded lectures, online course materials, etc? Yes / No

Why?

- b. Do you think it is essential to have **anywhere** access to course materials using ICTs?

Yes / No

Why?

4. Here are some statements about the use of ICT in education. Please rate each statement based on how agreeable it is to you using the following scale.

	Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagree	Very strongly disagree
a. The use of ICT improves communication and interaction						
b. The use of ICT has improved my interaction with others on my course						
c. The use of ICT has improved interaction between me and my course lecturers						
d. ICT is helping me to take part actively in my study program						
e. I think ICT as a communication tool is more useful for course administrators than for learners						
f. Although there is lot of encouragement to use educational technology, I personally feel face to face learning is a superior experience						
g. I have serious concerns about the quality/acceptability of Internet based (Online) degree programs						
h. If the degree program I am registered on is also offered fully Online, I think it should have the same recognition as my current degree						
i. It is important to use electronic sources because they are more up-to-date than books						
j. Using new technology for learning is more fun than traditional face to face learning						
k. To use ICTs for educational purposes, you have to have a thorough knowledge of computing						
l. Using TV or Radio programs for educational programs is a good idea because it can easily reach many people						
m. Using Online learning and computer based learning can limit students who are unable to afford them						
n. In my opinion using ICT as optional means (if students are able to use them, they can make use of it) rather than making it compulsory for everyone in a course is a more reasonable approach						
o. Using computers and electronic resources for learning is difficult if you are not competent in English						
p. I am concerned that using computers and electronic resources will affect my learning because there are not many resources available in Sinhala/Tamil (local languages) at the moment						

Section 3 – Your use of ICT for Learning

1. Please indicate how often you have used the following resources relating to your course.

	Daily	More than once a week	Once a week	Less than once a week	Never	Course does not use this
a. Printed lecture notes or course documents						
b. Digital copies of lectures (eg. PowerPoint slides), course documents (eg. PDF or Word documents) or recorded lectures (eg. on cassettes or CDs)						
c. Websites relevant to my course						
d. Electronic journals, electronic databases that store research papers						
e. Library resources						
f. Online discussion forums to discuss matters relevant to the study program						
g. Search engines such as Google, Yahoo to find extra information about course content						
h. TV or Radio programs relevant to my study programme						

2. Which resources do you prefer most for studying? and why?

Printed notes/ Digital copies of lecture notes/ Audio recorded lectures/ video recorded lectures /educational TV telecasts/ educational Radio broadcasts

Why?

3. Rank your preferred method of communicating with fellow students in your study program giving 1 for the most preferred method, 2 for next and so on.

	Rank
a. Phone (SMS or telephone call)	
b. Email	
c. Social networking sites (Facebook, twitter, yahoo or Google groups)	
d. Moodle discussion forums	
e. Meeting them face to face	
f. Other: please specify	

4. Have you ever contacted your course administrators using ICT? Yes / No

If "yes" how did you contact them?

5. Have you ever contacted your course lecturer using ICT? Yes / No

If "yes" how did you contact him/her?

6. If you have a problem relating to course material, how do you clarify them? Rank the following according to your choice, 1 for the most preferred 2 for next and so on. If you would not consider a listed method please leave them blank.

	Rank
a. Talk to friends	
b. Ask the lecturer	
c. Post a question on a discussion forum	
d. Try to find the answer by myself	
e. Ignore it	
f. Other: please specify	

7. How often do you contribute to online discussions relating to your course?
- Almost all discussions
 - Several discussions
 - Once or twice (rarely)
 - Never
 - I am not aware of online discussions relating to my course
 - My course does not use online discussion

Section 4 – Opportunities for using ICT

1. The following are some statements about access to computers and the Internet. Please rate each statement based on how agreeable it is for you using the following scale.

	Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagree	Very strongest disagree
a. Considering an average Sri Lankan's income, buying and maintaining a computer at home is quite expensive						
b. Considering an average Sri Lankan's income, having Internet access to a home computer is also expensive						
c. I do not think it is essential to have access to a computer for learning purposes						
d. I do not think it is essential to have access to Internet for learning purposes						
e. I would spend time learning on computers and the Internet because I think it is important						

2. I use the Computer

Every day ☐

Several times a week ☐

Once a week ☐

Less than once a week ☐

Never ☐

I don't want to use a computer ☐

3. Do you have a computer at home? Yes / No
 a. If "Yes", do you also have a printer? Yes / No
 b. If you do not have a computer at home, is there a regional center, a library or an Internet cafe where you can use a computer? Yes / No

4. How often do you access the Internet?
 Every day ☐ Less than once a week ☐
 Several times a week ☐ Never ☐
 Once a week ☐ I don't want to use Internet ☐

5. If you have access to the Internet, please state where you access the Internet (tick as many as applicable)
 At home ☐ Library or Public access point ☐
 At work ☐ Educational institute ☐
 Friend/relative's place ☐ Internet Cafe ☐

6. If you have internet access at home what is the connection type?
 Dial up (using landline or CDMA) ☐ GPRS access using mobile phone ☐
 BroadBand (ADSL, 3G) ☐ Other

7. Please indicate your ability to use the following programs to carry out the types of tasks shown

	Can do by myself	Can do with some help	Never done this before	Not sure	I don't think I can do this
a. Creating folders and managing files					
b. Using a word processor software to create a document					
c. Sending an email with an attachment					
d. Using a search engine to find degree programs offered by the National Online Distance Education Service					

8. Have you encountered any difficulties using computers/Internet for your study programme?

.....

Please add further comments/ suggestions:

Section 5 – Information about you

1. I am: Male ☐ Female ☐
2. I am years old
3. I am a: Full time student ☐ Part time student ☐
4. Are you registered for **any other degree program**? Yes ☐ No ☐
5. Are you in employment at the moment? Yes ☐ No ☐
- If "Yes" where are you working and what is your designation?
6. How would you categorize your **English language** proficiency?

Reading	Excellent <input type="checkbox"/>	Good <input type="checkbox"/>	Average <input type="checkbox"/>	Poor <input type="checkbox"/>	Very Poor <input type="checkbox"/>
Listening	Excellent <input type="checkbox"/>	Good <input type="checkbox"/>	Average <input type="checkbox"/>	Poor <input type="checkbox"/>	Very Poor <input type="checkbox"/>
Writing	Excellent <input type="checkbox"/>	Good <input type="checkbox"/>	Average <input type="checkbox"/>	Poor <input type="checkbox"/>	Very Poor <input type="checkbox"/>
Speaking	Excellent <input type="checkbox"/>	Good <input type="checkbox"/>	Average <input type="checkbox"/>	Poor <input type="checkbox"/>	Very Poor <input type="checkbox"/>
7. I am: Single ☐ Married ☐
8. What is the total monthly income of your family in Rs?

Less than 5,000 <input type="checkbox"/>	15,001 – 20,000 <input type="checkbox"/>	30,001 – 35,000 <input type="checkbox"/>
5,001 – 10,000 <input type="checkbox"/>	20,001 – 25,000 <input type="checkbox"/>	35,001 – 40,000 <input type="checkbox"/>
10,001 – 15,000 <input type="checkbox"/>	25,001 – 30,000 <input type="checkbox"/>	Above 40,001 <input type="checkbox"/>
9. Where do you live? (please specify the town/district)
10. What do you hope to do after completing this course? (select all that apply)

Find a job in Colombo <input type="checkbox"/>	Apply for migration <input type="checkbox"/>
Seek employment in other cities <input type="checkbox"/>	Seek opportunities for further education <input type="checkbox"/>
Seek employment abroad <input type="checkbox"/>	Other <input type="checkbox"/>

We would like to talk to you about your External Degree program experience. If you think you can give us 30 minutes of your time, please fill below and we will get back to you. Remember your name will also be entered to a draw where you can win Rs. 2500/=

Name:

Address:

Email/ Contact Number:

Thank you very much for taking time to complete this survey. If you are interested, the results of this survey could be made available to you in electronic format, please specify above the email address to which the results should be sent. We wish you a pleasant day!!!

Appendix - M Student Questionnaire – Sinhala



දුරස්ථ අධ්‍යාපන පාඨමාලා සඳහා තොරතුරු හා සන්නිවේදන තාක්ෂණය (ICTs)

තොරතුරු හා සන්නිවේදන තාක්ෂණය ශ්‍රී ලංකාවේ දුරස්ථ අධ්‍යාපන පාඨමාලා සඳහා ලබාදී ඇති දායකත්වය පිළිබඳව පර්යේෂණයක් අපි සිදුකරමු. ඔබ රාජ්‍ය විශ්ව විද්‍යාලයක දුරස්ථ අධ්‍යාපන පාඨමාලාවක් හදාරන බැවින් අපගේ පර්යේෂණයට දායක වන ලෙස ඔබට ඇරයුම් කර සිටිමු.

ඔබ දැනටමත් දන්නා ආකාරයට, විශ්ව විද්‍යාලයන්ට ඇතුළුවීමට බලාපොරොත්තුවෙන් සිටින බොහෝ සිසුන්ට ඒ සඳහා අවස්ථාවක් නොලැබී ඇත්තේ රාජ්‍ය විශ්ව විද්‍යාලයන්හි ඉඩකඩ ඉතාම සීමාසහිත වන බැවිනි. ඔබේ සහභාගිත්වය මෙම පර්යේෂණයට ලබා දීම තුළින්, තොරතුරු හා සන්නිවේදන තාක්ෂණය දුරස්ථ අධ්‍යාපන පාඨමාලා සඳහා යොදාගැනීම පිළිබඳව අවබෝධයක් ලබා ගැනීමටත්, ඒ තුළින් දුරස්ථ අධ්‍යාපන පාඨමාලා තවදුරටත් දියුණු කර තවත් බොහෝ සිසුන්ට අධ්‍යාපන අවස්ථා ලබාදීමට හැකිවනු ඇතැයි අපි බලාපොරොත්තු වෙමු. එබැවින් අපට සහය දීමට ඔබේ වටිනා කාලයෙන් මිනිත්තු කිහිපයක් වැය කරන මෙන් ඉල්ලා සිටිමු.

ප්‍රශ්නාවලි, සම්මුඛ සාකච්ඡා, ලිපි සහ සමූහ සාකච්ඡා අධ්‍යයන සඳහා භාවිත කරන අතර ලබාගන්නා තොරතුරු රහස්‍යගතව තබා ගැනේ. කෙටි සම්මුඛ සාකච්ඡාවකට (මිනිත්තු 30-40) සහභාගී වී අප පර්යේෂණයට සහය දීමට ඔබ කැමති නම් කරුණාකර ඔබේ තොරතුරු සඳහන් කරන්න. අපි ඔබට පහසු ටේලාවකට එම සාකච්ඡාව යොදාගැනීමට ඔබව සම්බන්ධ කර ගනිමු. සම්මුඛ සාකච්ඡා වලට සහභාගී වූවන්ගෙන් කෙනෙකුට ලබාදෙන රු. 2500/= දානුම් ඇදීමට සහභාගී වීමටත් ඔබට එව්ව හැකියාව ලැබේ.

මෙම අධ්‍යයනයට රිචින් විශ්ව විද්‍යාලයේ ආචාරධර්ම කමිටුවේ අනුමැතිය ලබා දී තිබේ.

අපගේ ප්‍රශ්නාවලියට පිළිතුරු සැපයීම පිළිබඳව ස්තූතිවන්ත වෙමු.

තරුණ රේඛා ලියනතුණවර්ධන

බීඩුලෙගොඩ වත්ත, කපුහෙම්පල පාර, අක්මිමන, ගාල්ල

0718690149

tharindu.rekha@gmail.com

මෙහිදී “තොරතුරු හා සන්නිවේදන තාක්ෂණය” යනු ඉගැන්වීම හා ඉගැන්වීමේ කටයුතු වලට භාවිත කරනු ලබන තොරතුරු හා සන්නිවේදන තාක්ෂණයයි. උදාහරණ ලෙස, රූපවාහිනිය, ගුවන් විදුලියේ ප්‍රචාරය වන අධ්‍යාපනික වැඩසටහන්; සංයුක්ත තැටි (CD) වල ගබඩා කර ඇති අධ්‍යාපනික වැඩසටහන්; අන්තර්ජාලය අධ්‍යාපනික කටයුතු වලට භාවිත කිරීම; මුද්‍රිත වැනි අධ්‍යාපන කළමනාකරන පද්ධති; පරිගනක කරන ලද දේශන; දුරකථන, කෙටි පණිවිඩ, විද්‍යුත් තැපෑල, ෆැක්ස් වැනි සන්නිවේදන ක්‍රම අධ්‍යාපනික කටයුතු වලට භාවිත කිරීම දැක්විය හැක.

ප්‍රශ්නාවලිය අවසානයේ සපයා ඇති හිස් කොටුව ඔබේ අදහස් හා යෝජනා සඳහා වෙන් කළ ඉඩකඩකි. කරුණාකර ඔබේ අදහස් ප්‍රකාශ කිරීමට එම ඉඩ යොදා ගන්න.

1 - උපාධි සාධමාලාව පිළිබඳ විස්තර

1. ඔබේ විශ්ව විද්‍යාලය: / වෙනත් (කරුණාකර සඳහන් කරන්න)
2. උපාධි සාධමාලාවේ නම:
3. ඉගනුම් ලබන වසර:.....
4. දුරස්ථ අධ්‍යාපන සාධමාලා තෝරා ගැනීමට හේතු සම්බන්ධ පහත දැක්වේ. ඒවා සමග ඔබ කොතරම් දුරට එකඟ වන්නේදැයි සඳහන් කරන්න. උදාහරණයක් ලෙස, යම් හේතුවක් සමග සම්පූර්ණයෙන්ම එකඟ නම් කරුණාකර 'සම්පූර්ණයෙන්ම එකඟයි' ඉදිරියෙන් $\sqrt{\quad}$ සලකුණ යොදන්න; යම් හේතුවක් සමග ඔබ කිසිසේත්ම එකඟ නොවේ නම්, 'කිසිසේත්ම එකඟ නොවේ' ඉදිරියෙන් $\sqrt{\quad}$ සලකුණ යොදන්න; යම් හේතුවක් සමග ඔබ යම් පමණකට එකඟ නම්, ඔබේ එකඟතාවය හොඳින්ම පෙන්වුම් කරන පිළිතුර ඉදිරියෙන් $\sqrt{\quad}$ සලකුණ යොදන්න.



	සම්පූර්ණයෙන්ම එකඟයි	බොහෝමයක් එකඟයි	එකඟයි	එකඟ නොවේ	කිසිම එකඟ නොවේ	කිසිම එකඟ නොවේ
a. සාධමාලා තෝරා ගැනීමේදී මට අවශ්‍ය කළ සාධමාලාව නොලැබීම නිසා						
b. සාධමාලා තෝරා ගැනීමේදී මට අවශ්‍ය කළ විශ්ව විද්‍යාලය නොලැබීම නිසා						
c. මෙම සාධමාලාවේ ගාස්තු දැරිය හැකි මට්ටමක පවතින නිසා						
d. වෙනත් වගකීම් වලට ඉඩ සලසා ගැනීමට අර්ධ කාලීන සාධමාලාවක් අවශ්‍ය කළ නිසා						
e. මට ඉඩ ලැබෙන පරිදි ස්වයං අධ්‍යයනයක යෙදීමට අවශ්‍ය කළ නිසා						
f. නොකඩවා පවත්වන පන්ති වලට සහභාගී වීමට කිටු අකමැත්ත/අපහසුතාවය නිසා						
g. අධ්‍යයනයන්ට උදව් වීමට ප්‍රාදේශීය මධ්‍යස්ථාන / පෞද්ගලික අමතර පන්ති ඇති නිසා						
h. ඉගැන්වීමේ ක්‍රියාවලියේදී තොරතුරු හා සන්නිවේදන තාක්ෂණය යොදාගන්නා නිසා						
i. මෙම සාධමාලාව ගාස්තු ගෙවීමකින් තොරව අධ්‍යයනයට ශිෂ්‍යත්වයක් ලැබීම නිසා						
j. වෙනත් (කරුණාකර සඳහන් කරන්න)						

5. ඔබේ සාධමාලාවේ දේශකයා සමග මුහුණට මුහුණ හමුවී ඉගනුමට අවස්ථාව ලැබේද? ඔව් / නැත
ඔබේ පිළිතුර "ඔව්" නම් කොපමන කලකට වරක්ද?
6. ඔබ මෙම සාධමාලාවට සූදානම් වීම සඳහා වෙනත් පෞද්ගලික අමතර පන්ති වලට සහභාගී වෙනවාද? ඔව් / නැත
7. ඔබේ පිළිතුර "ඔව්" නම්, මෙම අමතර පන්ති අවශ්‍යයැයි ඔබ සිතන්නේ ඇයි?

මෙම සාධමාලාවට සිසුන් සූදානම් කරන පෞද්ගලික අමතර පන්ති නොතිබුණි නම්, ඔබ මෙම සාධමාලාව තෝරා ගන්නවාද? ඔව් / නැත

2 – තොරතුරු හා සන්නිවේදන තාක්ෂණය පාඨමාලාවට යොදාගැනීම ගැන ඔබේ අදහස්

1. මගේ පාඨමාලාව කළ පහත සඳහන් දේ උපයෝගී කර ගැනේ (අදාළ සියලු දේ තෝරා ගන්න)

a. නොකඩවා විකාශය වන රූපවාහිනී වැඩසටහන්		f. සිටි තැටි ගත කළ පාඩම්	
b. නොකඩවා විකාශය වන ගුවන්විදුලි වැඩසටහන්		g. කැසට් පට / ඩිවිසෝ කැසට් පට	
c. මුහුණට මුහුණ හමුවී පවත්වන පන්ති		h. වෙබ් අඩවි	
d. මුද්‍රිත සටහන් සහ පත්‍රිකා		i. සාකච්ඡා ෆෝරම් (අන්තර්ජාලය හරහා සිදුකරන සාකච්ඡා)	
e. ඉගනුම් කලමනාකරණ පද්ධති (මුඩල් වැනි)		j. විද්‍යුත් තැපෑල (ඊ මේල්) මගින් කරන පණිවිඩ හුවමාරු	

2. විශ්ව විද්‍යාලයන්හි පාඨමාලා ඉගැන්වීමට හා වැඩි දියුණු කිරීමට තොරතුරු හා සන්නිවේදන තාක්ෂණය වැඩි වැඩියෙන් යොදා ගැනීමට හේතු ලෙස ඔබ දකින්නේ මොනවාද? පහත සඳහන් කර ඇති හේතු සමග ඔබ කොතරම් දුරට එකඟ වන්නේ දැයි සඳහන් කරන්න.

	සම්පූර්ණයෙන්ම එකඟයි	යෙදවීමේ එකඟයි	එකඟයි	එකඟ නොවේ	තදින්ම එකඟ නොවේ	තදින්ම එකඟ නොවේ
a. වියදම් කපාහරීමට						
b. අධ්‍යාපනික මූලාශ්‍ර සමග පැය 24 දිම සහ සතියේ දින 7 දිම සම්බන්ධ වීමට හැකියාව ලබාදීමට						
c. සෙසු ලෝකයේ වෙනස්වීම් සමග උරෙහුර සිටීමට						
d. පාඨමාලාවේ තත්වය උසස් කිරීමට						
e. සිසුන්ගේ අධ්‍යාපන අත්දැකීම් උසස් කිරීමට (උදා. අන්තර්ජාලය හරහා සිදුකරන සාකච්ඡා තුළින් සිසු ප්‍රජාවක් ගොඩනැගීම)						
f. අඩු පහසුකම් සහිත සිසුන්ට අවස්ථාව ලබාදීමට (උදා. දුෂ්කර පළාත් වල සිටිම නිසා හෝ ආබාධිත තත්වයක් නිසා පන්ති වලට සහභාගීවීමට අපහසු සිසුන්)						
g. වෙනත් (කරුණාකර සඳහන් කරන්න)						

3. අධ්‍යාපනික මූලාශ්‍ර සමග **ඕනෑම තැනකදී** (විශ්ව විද්‍යාලයේදී, ගෙදරදී හෝ ඔබ වෙනත් රටක සිටිනම් එහිදී) හා **ඕනෑම වේලාවකදී** (වැඩකරන වේලාවකදී හෝ රාත්‍රියේදී) ප්‍රවේශ වීමට තාක්ෂණය ඉඩ සලසා දෙයි. උදාහරණයක් ලෙස මුඩල් වැනි ඉගනුම් කලමනාකරණ පද්ධතියක ඇති අධ්‍යාපනික තොරතුරු අන්තර්ජාලයට සම්බන්ධ විය හැකි ඕනෑම තැනකදී හා ඕනෑම වේලාවකදී ලබාගැනීමට පුළුවන.

- a. තොරතුරු හා සන්නිවේදන තාක්ෂණය භාවිතා කිරීමෙන් **ඕනෑම වේලාවකදී** පාඨමාලාවේ අධ්‍යාපනික තොරතුරු වෙත ප්‍රවේශ වීමේ හැකියාව ලබාදීම වැදගත් යැයි ඔබ සිතන්නේද? ඔව් / නැහැ
ඒ ඇයි?
.....
- b. තොරතුරු හා සන්නිවේදන තාක්ෂණය භාවිතා කිරීමෙන් **ඕනෑම තැනකදී** පාඨමාලාවේ අධ්‍යාපනික තොරතුරු වෙත ප්‍රවේශ වීමේ හැකියාව ලබාදීම වැදගත් යැයි ඔබ සිතන්නේද? ඔව් / නැහැ
ඒ ඇයි?
.....

4. මෙහි සඳහන් වන්නේ තොරතුරු හා සන්නිවේදන තාක්ෂණය අධ්‍යාපනයට යොදාගැනීම පිළිබඳව ප්‍රකාශ කිපයකි. මේවා සමග ඔබ කොතරම් දුරට එකඟ දැයි සඳහන් කරන්න.

	සම්පූර්ණයෙන්ම එකඟයි	බොහෝමයක් එකඟයි	එකඟයි	එකඟ නොවේ	තර්කමය එකඟයි	තොරතුරු නොමැත
a. තොරතුරු හා සන්නිවේදන තාක්ෂණය සන්නිවේදනය හා අන්තර් පුද්ගල සම්බන්ධතා වැඩි දියුණු කරයි.						
b. තොරතුරු හා සන්නිවේදන තාක්ෂණය යොදාගැනීමෙන් පාඨමාලාවේ වෙනත් සිසුන් සමග මගේ අන්තර් සම්බන්ධතා දියුණු විය.						
c. තොරතුරු හා සන්නිවේදන තාක්ෂණය යොදාගැනීමෙන් මම සහ මගේ පාඨමාලාවේ ගුරුවරු අතර අන්තර් සම්බන්ධතා දියුණු විය.						
d. මගේ පාඨමාලාව සමග ක්‍රියාකාරී ලෙස සම්බන්ධ වීමට තොරතුරු හා සන්නිවේදන තාක්ෂණය තුළින් මට අවස්ථාව ලැබී තිබේ.						
e. තොරතුරු හා සන්නිවේදන තාක්ෂණය තොරතුරු හුවමාරු මාධ්‍යයක් ලෙස සිසුන්ට වඩා පාඨමාලා පරිපාලකවරුන්ට ප්‍රයෝජනවත් බව මගේ අදහසයි.						
f. අධ්‍යාපනය සඳහා තාක්ෂණය යොදාගැනීමට බොහෝ දිරිගැන්වීම් තිබුණත්, මගේ හැඟීම නම් මුහුණට මුහුණ හමුවී සිදුකරන පන්ති කාමරයේ ඉගෙනුම් ඉගැන්වීම ඊට වඩා සාර්ථක බවයි.						
g. අන්තර්ජාලය භාවිතයෙන් සිදුකරන (ඔන්ලයින්) උපාධි පාඨමාලා වල තත්වය / ඒවාට ඇති පිළිගැනීම පිළිබඳ මට ගැටළු පවතී.						
h. මම හදාරණ උපාධි පාඨමාලාවට සම්පූර්ණයෙන්ම අන්තර්ජාලය භාවිතයෙන් (ඔන්ලයින්) හැදෑරීමට අවස්ථාව දෙන්නේ නම්, මගේ උපාධියට ඇති පිළිගැනීමට එයටද ලැබිය යුතුයි.						
i. පොත් වලට වඩා අළුත් දැණුම අඩංගුවන නිසා ඉලෙක්ට්‍රොනික මාධ්‍යයන් හරහා තොරතුරු ලබාගැනීම වැදගත්වේ.						
j. අළුත් තාක්ෂණය යොදාගනිමින් ඉගැනීම මුහුණට මුහුණලා පන්ති කාමරයකදී කරන සාම්ප්‍රදායික ඉගැනීමට වඩා ආකර්ශනීය අත්දැකීමකි.						
k. තොරතුරු හා සන්නිවේදන තාක්ෂණය ඉගැනීමට යොදාගැනීමට නම් ඔබ පරිඝණක පිළිබඳව ඉතාම හොඳ දැණුමක් ඇති අයෙක් විය යුතුයි.						
l. රූපවාහිනී හෝ ගුවන්විදුලි අධ්‍යාපනික වැඩසටහන් භාවිතා කිරීම මගින් බොහෝ දෙනාට ඒවාට පහසුවෙන් සම්බන්ධ විය හැක.						
m. අන්තර්ජාලය භාවිතයෙන් (ඔන්ලයින්) සහ පරිඝණක යොදාගනිමින් කරනු ලබන ඉගැනීම් වලදී ඒවා ලබාගැනීමට වත්කමක් නැති සිසුන්ට ලැබෙන අවස්ථා අඩුවේ.						
n. මගේ අදහසට අනුවල තොරතුරු හා සන්නිවේදන තාක්ෂණය විකල්පයක් ලෙස යොදා ගැනීම (තොරතුරු හා සන්නිවේදන තාක්ෂණය භාවිතා කළ හැකි අයට ඊට ඉඩ සැලසීම) එය අනිවාර්ය කිරීමට වඩා සාධාරණය.						
o. ඔබේ ඉංග්‍රීසි දැනුම පුළුල් නොවේ නම් ඉගැනීම සඳහා පරිඝණක සහ විද්‍යුත් මාධ්‍ය යොදාගැනීම අපහසුය.						
p. සිංහල / දෙමළ මාධ්‍යයෙන් අවශ්‍ය තරම් සම්පත් දැනට නොමැති නිසා, පරිඝණක සහ විද්‍යුත් මුලාශ්‍ර භාවිතය මගේ ඉගැනීමට අහිතකර ලෙස බලපානු ඇතැයි මට සැකයක් පවතී.						

3 – ඉගැන්වීමේදී තොරතුරු හා සන්නිවේදන තාක්ෂණය යොදාගන්නා ආකාරය

1. කරුණාකර පහත සඳහන් සම්පත් ඔබේ පාඨමාලාවට අදාළව ඔබ කෙතරම් වාර ගණනක් භාවිතා කර ඇත්දැයි සඳහන් කරන්න.

	දිනපතා	සතියකට වරකට වඩා	සතියකට වරක්	සතියකට වරකට අඩුවෙන්	කවදා වත් නැ	මගේ පාඨමාලාව මෙය භාවිත නොකරයි
a. මුද්‍රිත දේශන සටහන් හෝ පාඨමාලාවට අදාළ අනෙකුත් සටහන්						
b. ඩිජිටල් ආකාරයට ඇති දේශන (උදා. පවර්පොයින්ට් ස්ලයිඩ්), පාඨමාලා සටහන් (උදා. පිඩ්එන් හෝ වර්ඩ් ආකාරයට වන ලියකියවිලි), පටිගත කළ දේශන (උදා. සිඩ් හෝ කැසට් ලෙස)						
c. පාඨමාලාවට අදාළ වෙබ් අඩවි						
d. ඉලෙක්ට්‍රොනික ජර්නල, ඉලෙක්ට්‍රොනික දත්ත ගබඩා (ඩේටා බේස්) වල ඇති අධ්‍යයන පත්‍රිකා						
e. පුස්තකාල සම්පත්						
f. පාඨමාලාවට අදාළ කරුණු සාකච්ඡා කරන සාකච්ඡා ලෝරම් (අන්තර්ජාලය හරහා සිදුකරන සාකච්ඡා)						
g. පාඨමාලාවට අදාළව වැඩිදුර කරුණු සෙවීමට ගූගල්, යාහු වැනි සෙවුම් යන්ත්‍ර (සර්ච් එන්ජින්)						
h. පාඨමාලාවට අදාළ රූපවාහිනී හා ගුවන්විදුලි වැඩසටහන්						

2. ඉගැන්වීම සඳහා ඔබ වඩාත්ම ප්‍රිය කරන්නේ කුමන මූලාශ්‍රයද? ඒ ඇයි?
 මුද්‍රිත සටහන් / ඩිජිටල් ආකාරයට ඇති දේශන සටහන් / කැසට් පටිගත කළ දේශන / විඩියෝ ගත කළ දේශන / රූපවාහිනී අධ්‍යාපනික වැඩසටහන් / ගුවන්විදුලි අධ්‍යාපනික වැඩසටහන්
 ඇයි?
3. ඔබේ පාඨමාලාවේම සිටින වෙනත් සිසුන් සමග සන්නිවේදනය සඳහා ඔබට යොදාගත හැකි ක්‍රම සමහරක් පහත දැක්වේ.
 ඒවා භාවිතයට ඔබේ ඇති කැමැත්ත අනුපිළිවෙලින් දක්වන්න. එහිදී වඩාත්ම කැමති ක්‍රමයට 1 ද රිලය ක්‍රමයට 2 ද ලෙස ඉදිරියෙන් ලියන්න.

	අනුපිළිවෙල
a. දුරකතනය (කෙටි පණිවිඩ හෝ දුරකතන ඇමතුම්)	
b. විද්‍යුත් තැපෑල (රි මේල්)	
c. සමාජ සම්බන්ධතා සඳහා ඇති වෙබ් අඩවි (උදා. ලේස් ඩුක්, ටිට්ටර්, යාහු ෆර්ස්ස්, ගූගල් ෆර්ස්ස්)	
d. මුඩල් සාකච්ඡා ලෝරම්	
e. හමුවීමෙන්	
f. වෙනත් (කරුණාකර සඳහන් කරන්න)	

4. තොරතුරු හා සන්නිවේදන තාක්ෂණය යොදා ගනිමින් ඔබ ඔබේ පාඨමාලා පරිපාලකවරුන් හා සම්බන්ධ වී තිබේද?
 ඔව් / නැහැ

පිළිතුර “ඔව්” නම් ඒ කෙසේද?

5. තොරතුරු හා සන්නිවේදන තාක්ෂණය යොදා ගනිමින් ඔබ ඔබේ පාඨමාලා ආචාර්යවරුන් හා සම්බන්ධ වී තිබේද? ඔව් / නැහැ

පිළිතුර “ඔව්” නම් ඒ කෙසේද?

6. පාඨමාලාවේ කරුණු සම්බන්ධව ගැටළු මතුවූ විට ඔබ ඒවා විසඳා ගන්නේ කෙසේද? පහත ක්‍රම ඔබට වඩාත් සමීප ආකාරයට අනුපිළිවෙලින් දක්වන්න. එහිදී වඩාත්ම කැමති ක්‍රමයට 1 ද ඊළඟ ක්‍රමයට 2 ද ලෙස ඉදිරියෙන් ලියන්න.

	අනුපිළිවෙල
a. යහළුවන් හා කථා කිරීමෙන්	
b. ගුරුවරයා ගෙන් විමසීමෙන්	
c. සාකච්ඡා ලෝරමයකට ප්‍රශ්නය ඉදිරිපත් කිරීමෙන්	
d. මිච්ඡින්ම පිළිතුර සොයාගැනීමට උත්සහ කිරීමෙන්	
e. නොසලකා හැරීමෙන්	
f. වෙනත් (කරුණාකර සඳහන් කරන්න)	

7. පාඨමාලාවට අදාළ කරුණු සාකච්ඡා කරන සාකච්ඡා ලෝරම (අන්තර්ජාලය හරහා සිදුකරන සාකච්ඡා) වලට ඔබ කොපමණ දායකත්වයක් සපයන්නේ ද?
- සෑම එකකටම පාහේ
 - සමහරකට
 - වරක් හෝ දෙවරක්
 - කවදාවත් නෑ
 - මගේ පාඨමාලාවට අදාළ කරුණු සාකච්ඡා කරන සාකච්ඡා ලෝරම පිළිබඳව මම නොදනිමි
 - මගේ පාඨමාලාවේදී සාකච්ඡා ලෝරම භාවිතා නොවේ

4 – තොරතුරු හා සන්නිවේදන තාක්ෂණය භාවිතයට ඇති අවස්ථා

1. මෙහි සඳහන් වන්නේ පරිඝණක හා අන්තර්ජාලයට ඇති පිරිසුම් පිළිබඳව ප්‍රකාශ කීපයකි. මේවා සමග ඔබ කොතරම් දුරට එකඟ දැයි සඳහන් කරන්න.

	සම්පූර්ණයෙන්ම එකඟයි	බොහෝමයක් එකඟයි	එකඟයි	එකඟ නොවේ	තදින්ම එකඟ නොවේ	තදින්ම එකඟ නොවේ
a. ශ්‍රී ලාංකිකයකු ගේ සාමාන්‍ය ආදායම සැලකීමේ දී, නිවසේ භාවිතයට පරිඝණකයක් මිලදී ගැනීම සහ නඩත්තුව සැබවින්ම මිල අධිකය.						
b. ශ්‍රී ලාංකිකයකු ගේ සාමාන්‍ය ආදායම සැලකීමේ දී, නිවසේ භාවිතයට අන්තර්ජාල පිරිසුම් ලබාගැනීම මිල අධිකය.						
c. ඉගනීමේ කාර්යය සඳහා පරිඝණකයක් භාවිතය අත්‍යවශ්‍ය යැයි මම නොසිතමි.						
d. ඉගනීමේ කාර්යය සඳහා අන්තර්ජාල පිරිසුම් අත්‍යවශ්‍ය යැයි මම නොසිතමි.						
e. පරිඝණක හා අන්තර්ජාලය ආශ්‍රයෙන් ඉගනීමට මම කාලය වැය කරන්නේ එය වැදගත් යැයි මම සිතන බැවිනි.						

2. මම පරිඝණකය භාවිත කරන්නේ

සෑම දිනකම ☐

සතියකට කීප වරක් ☐

සතියට වරක් ☐

සතියට වරකට වඩා අඩුවෙන් ☐

කවදාවත් නෑ ☐

මම පරිඝණක භාවිතට අකමැත්තෙමි ☐

3. ඔබේ නිවසේ පරිඝණකයක් තිබේද? ඔව් / නැත
- a. පිළිතුර “ඔව්” නම්, ඔබ නිවසේ මුද්‍රණ යන්ත්‍රයක් (ප්‍රින්ටරයක්) තිබේද? ඔව් / නැත
- b. ඔබේ නිවසේ පරිඝණකයක් නොමැති නම්, පරිඝණක භාවිතයට ඔබට අවස්ථාව ලබාගත හැකි ප්‍රාදේශීය මධ්‍යස්ථානයක්, පුස්තකාලයක්, හෝ මුදල් ගෙවා අන්තර්ජාල පහසුකම් ලබා ගත හැකි ස්ථානයක් (ඉන්ටර්නෙට් කැෆේ) තිබේද? ඔව් / නැත

4. ඔබ අන්තර්ජාලයට පිවිසෙන්නේ?

සෑම දිනකම	<input type="checkbox"/>
සතියකට කිප වරක්	<input type="checkbox"/>
සතියකට වරක්	<input type="checkbox"/>

සතියට වරකට වඩා අඩුවෙන්
 කවදාවත් නෑ
 මම අන්තර්ජාල භාවිතයට අකමැත්තෙමි

5. ඔබට අන්තර්ජාල පිවිසුම් ඇත්නම්, ඒ කොතනදී? (අදාල සියල්ල ලකුණු කරන්න)

නිවසේදී	<input type="checkbox"/>	පුස්තකාලය හෝ පොදු භාවිතයට වන පිරිසුම් ස්ථානය	<input type="checkbox"/>
සේවා ස්ථානයේදී	<input type="checkbox"/>	අධ්‍යාපනය ලබන ආයතනයෙන්	<input type="checkbox"/>
මිතුරෙකු/නූදූයකු හේ නිවසේදී	<input type="checkbox"/>	ඉන්වනෙට් කුලේ	<input type="checkbox"/>

6. ඔබ නිවසේ අන්තර්ජාල පිවිසුම් ඇත්නම්, ඒ කවර සම්බන්ධතාවයකින්?

දුරකථන හෝ සි ඩි එම් ඒ දුරකථනයකින් ☐ ජී පී ආර් එස් ☐
 පුළුල් තරංග (බ්ලේඩ් බ්ලැන්ඩ්) (ඒ ඩි එස් එල්, 3ජී) ☐ වෙනත් ☐

7. පහත දක්වා ඇති කාර්යයන් කිරීමට ඔබට ඇති හැකියාව සඳහන් කරන්න.

	මට පැවති නැඳි හැක	උදව් ඇතිව නැඳි හැක	මෙයට පෙර කර නැත	නැත නැත	මට මෙය නැඳි හැක නොවේ
a. ගෝල්ඩරයක් නිර්මාණය කර ගොණු (ගයිල්) හැසිරවීම					
b. වදන් සැකසීමේ මෘදුකාංගයක් (වර්ඩ් ප්‍රොසෙසර්) භාවිත කර වෙනිකුමන්ට් එකක් නිර්මාණය කිරීම					
c. ඇරැවීමන්ට් එකක් සහිතව විද්‍යුත් තැපෑලෙන් (රීමේල්) ලිපියක් යැවීම					
d. සෙවුම් යන්ත්‍රයක් භාවිත කර ජාතික සබැඳි දුරස්ථ අධ්‍යාපන සේවාව මගින් හැඳිරීමට අවස්ථාව ලබා දී ඇති උපාධි පාඨමාලා පිළිබඳ විස්තර සෙවීම					

8. ඔබේ පාඨමාලාව හැදෑරීමේ දී පරීක්ෂකය/අන්තර්ජාලය භාවිත කිරීමේ දී ඔබට අපහසුතා ඇතිවී තිබේද?

.....

කරුණාකර ඔබේ අදහස්/යෝජනා මෙහි සඳහන් කරන්න:

5 - ඔබේ තොරතුරු

1. ස්ත්‍රී පුරුෂ භාවය : ස්ත්‍රී ☐ පුරුෂ ☐
2. ඔබේ වයස අවුරුදු
3. මම: පූර්ණ කාලීන සිසුවෙක් ☐ අර්ධ කාලීන (පාරි ටයිම්) සිසුවෙක් ☐
4. ඔබ වෙනත් උපාධි පාඨමාලාවක ලියාපදිංචි වී සිටිද? ඔව් ☐ නැත ☐
5. ඔබ දැනට රැකියාවක යෙදෙන්නේද? ඔව් ☐ නැත ☐

පිළිතුර “ඔව්” නම් රැකියා ස්ථානය සහ තනතුර?

6. ඔබේ ඉංග්‍රීසි භාෂා ප්‍රවීණත්වය කෙසේද?

කියවීම	විශිෂ්ඨයි <input type="checkbox"/>	හොඳයි <input type="checkbox"/>	සාමාන්‍ය <input type="checkbox"/>	දුර්වලයි <input type="checkbox"/>	ඉතා දුර්වලයි <input type="checkbox"/>
ඇහුම්කන් දීම	විශිෂ්ඨයි <input type="checkbox"/>	හොඳයි <input type="checkbox"/>	සාමාන්‍ය <input type="checkbox"/>	දුර්වලයි <input type="checkbox"/>	ඉතා දුර්වලයි <input type="checkbox"/>
ලිවීම	විශිෂ්ඨයි <input type="checkbox"/>	හොඳයි <input type="checkbox"/>	සාමාන්‍ය <input type="checkbox"/>	දුර්වලයි <input type="checkbox"/>	ඉතා දුර්වලයි <input type="checkbox"/>
කථා කිරීම	විශිෂ්ඨයි <input type="checkbox"/>	හොඳයි <input type="checkbox"/>	සාමාන්‍ය <input type="checkbox"/>	දුර්වලයි <input type="checkbox"/>	ඉතා දුර්වලයි <input type="checkbox"/>

7. මම : අවිවාහකයි ☐ විවාහකයි ☐

8. ඔබ පවුලේ මාසික ආදායම රු?

5,000 ට අඩු <input type="checkbox"/>	15,001 - 20,000 <input type="checkbox"/>	30,001 - 35,000 <input type="checkbox"/>
5,001 - 10,000 <input type="checkbox"/>	20,001 - 25,000 <input type="checkbox"/>	35,001 - 40,000 <input type="checkbox"/>
10,001 - 15,000 <input type="checkbox"/>	25,001 - 30,000 <input type="checkbox"/>	40,001 ට වැඩි <input type="checkbox"/>

9. ඔබේ පදිංචිය? (කරුණාකර නගරය/දිස්ත්‍රික්කය දක්වන්න)

10. මෙම පාඨමාලාව අවසානයේ ඔබේ බලාපොරොත්තුව? (අදාළ සියල්ල තෝරා ගන්න)

කොළඹින් රැකියාවක් සොයා ගැනීම <input type="checkbox"/>	සංක්‍රමනයට (මයිග්‍රේෂන්) ඉල්ලුම් කිරීම <input type="checkbox"/>
වෙනත් නගරයක රැකියාවක් සොයා ගැනීම <input type="checkbox"/>	වැඩිදුර අධ්‍යාපනයට යොමුවීම <input type="checkbox"/>
විදේශ රැකියාවක් සොයා ගැනීම <input type="checkbox"/>	වෙනත් <input type="checkbox"/>

ඔබේ උපාධි පාඨමාලා අත්දැකීම පිළිබඳව ඔබ හා කථා කිරීමට අපි කැමැත්තෙමු. ඔබේ කාලයෙන් විනාඩි 30ක් ඒ සඳහා වෙන් කිරීමට හැකි නම් කරුණාකර පහත තොරතුරු සම්පූර්ණ කරන්න. මෙයට සහභාගී වන අයගේ නම් රු 2500/= ක් දිනාගත හැකි දිනුම් ඇදීමකටද ඇතුළත් කෙරෙනු ඇත.

නම:

ලිපිනය:

විද්‍යුත් තැපෑල/ දුරකතනය:

මෙම ප්‍රශ්නාවලිය සම්පූර්ණ කළ ඔබට ස්තූතියි. ඔබ කැමති නම්, මෙහි ප්‍රතිඵල ඔබට දැන්විය හැක. ඒ සඳහා ඔබේ විද්‍යුත් තැපෑල ලිපිනය සඳහන් කරන්න. ඔබට සුභ දවසක්!!!

Appendix - N Questionnaire Answer Coding

Section 1 – Degree Program Details

1. University: [REDACTED] / Other (please specify)
[REDACTED]
2. Name of Degree Program
[REDACTED]
3. Year of study

1st Year	= 1
2nd Year	= 2
3rd Year	= 3
4th Year	= 4
4. Here are some common reasons for selecting external degree programs. Please rate each statement based on how agreeable it is for you using the following scale. For example, if you think the statement is completely agreeable, please tick (√) 'very strongly agree'; if you think the statement is not agreeable at all, please tick 'very strongly disagree'. If however you think it is somewhere in between, then please tick the one that best describes how agreeable it is to you.

Very Strongly Agree	= 1
Strongly Agree	= 2
Agree	= 3
Disagree	= 4
Strongly Disagree	= 5
Very Strongly Disagree	= 6

	very strongly agree	strongly agree	agree	disagree	strongly disagree	very strongly disagree
a. I did not get my preferred course at the course selection	1	2	3	4	5	6
b. I did not get my preferred university at the university selection	1	2	3	4	5	6
c. The fees for this course is affordable	1	2	3	4	5	6
d. I wanted a part time course that can accommodate my other commitments	1	2	3	4	5	6
e. I wanted to study independently in my own time	1	2	3	4	5	6
f. Difficulty / an unwillingness to attend regular classes	1	2	3	4	5	6
g. There is a regional centre/ private tuition class that supports learners	1	2	3	4	5	6
h. I do this course partly or wholly because of the use of ICTs in teaching	1	2	3	4	5	6
i. I won a scholarship that covers my course fees for this course	1	2	3	4	5	6
j. Other (please specify)						

5. a. Does your course offer face to face learning sessions?

Yes = 1

No = 2

b. If "yes" how often?

.....

6. Do you attend any private tuition (extra classes) to prepare for this course?

Yes = 1

No = 2

7. a. If "Yes" why do you think these classes are required?

.....

b. If there was no private tuition (extra classes) supporting your program, would you have still considered registering for this program?

Yes = 1

No = 2

Section 2 – Use of ICT in Programs and Your Views

1. My course uses (select all that apply)

a. Regular TV Programs		f. CD with all content	
b. Regular Radio Programs		g. Audio/ Video cassettes	
c. Face to Face classes		h. Dedicated Website	
d. Printed Notes and Handouts		i. Discussion forums (online discussions)	
e. Dedicated Learning Management System(Moodle)		j. email communication for notices, assignment submissions, etc	

2. Universities increasingly are using ICTs to deliver/enhance their learning programs. Why do you think ICT is introduced this way? The following are some commonly stated reasons. Please rate each statement based on how agreeable it is to you using the following scale.

Very Strongly Agree = 1
 Strongly Agree = 2
 Agree = 3
 Disagree = 4
 Strongly Disagree = 5
 Very Strongly Disagree = 6

	Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagree	Very strongest disagree
a. Cost cutting	1	2	3	4	5	6
b. Make learning materials available 24hours a day and 7 days a week	1	2	3	4	5	6
c. To be abreast with the rest of the world	1	2	3	4	5	6
d. To enhance the quality of the course	1	2	3	4	5	6
e. To enhance student experience (for example, creating a community of learners with online discussion forums)	1	2	3	4	5	6
f. To reach disadvantaged students (for example, students in rural areas and disabled who find it difficult to attend classes)	1	2	3	4	5	6
g. Other: please specify						

3. Course materials can be made available **anywhere** (accessing them from the university, at home, even when you are in another country etc) and **any time** (accessing them during working hours or even in the night) using technology. For example, course material on a Learning Management System such as Moodle is accessible any time anywhere as long as you can connect to the Internet.
- a. (i) Do you think it is essential to have **anytime** access to course materials using ICTs such as recorded lectures, online course materials, etc?
 Yes = 1
 No = 2
 (ii) Why?
- b. (i) Do you think it is essential to have **anywhere** access to course materials using ICTs?
 Yes = 1
 No = 2
 (ii) Why?
4. Here are some statements about the use of ICT in education. Please rate each statement based on how agreeable it is to you using the following scale.
- Very Strongly Agree = 1
 Strongly Agree = 2
 Agree = 3
 Disagree = 4
 Strongly Disagree = 5
 Very Strongly Disagree = 6

	Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagree	Very strongly disagree
a. The use of ICT improves communication and interaction	1	2	3	4	5	6
b. The use of ICT has improved my interaction with others on my course	1	2	3	4	5	6
c. The use of ICT has improved interaction between me and my course lecturers	1	2	3	4	5	6
d. ICT is helping me to take part actively in my study program	1	2	3	4	5	6
e. I think ICT as a communication tool is more useful for course administrators than for learners	1	2	3	4	5	6
f. Although there is lot of encouragement to use educational technology, I personally feel face to face learning is a superior experience	1	2	3	4	5	6

	Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagree	Very strongly disagree
g. I have serious concerns about the quality/acceptability of Internet based (Online) degree programs	1	2	3	4	5	6
h. If the degree program I am registered on is also offered fully Online, I think it should have the same recognition as my current degree	1	2	3	4	5	6
i. It is important to use electronic sources because they are more up-to-date than books	1	2	3	4	5	6
j. Using new technology for learning is more fun than traditional face to face learning	1	2	3	4	5	6
k. To use ICTs for educational purposes, you have to have a thorough knowledge of computing	1	2	3	4	5	6
l. Using TV or Radio programs for educational programs is a good idea because it can easily reach many people	1	2	3	4	5	6
m. Using Online learning and computer based learning can limit students who are unable to afford them	1	2	3	4	5	6
n. In my opinion using ICT as optional means (if students are able to use them, they can make use of it) rather than making it compulsory for everyone in a course is a more reasonable approach	1	2	3	4	5	6
o. Using computers and electronic resources for learning is difficult if you are not competent in English	1	2	3	4	5	6
p. I am concerned that using computers and electronic resources will affect my learning because there are not many resources available in Sinhala/Tamil (local languages) at the moment	1	2	3	4	5	6

Section 3 – Your use of ICT for Learning

1. Please indicate how often you have used the following resources relating to your course.

Daily = 1
 More than once a week = 2
 Once a week = 3
 Less than once a week = 4
 Never = 5
 Course does not use this = 6

2. Which resources do you prefer most for studying? and why?

Printed notes/ Digital copies of lecture notes/ Audio recorded lectures/ video recorded lectures /educational TV telecasts/ educational Radio broadcasts

Printed Notes = 1
 Digital copies of lecture notes = 2
 Audio recorded lectures = 3
 Video recorded lectures = 4
 Educational TV telecasts = 5
 Educational Radio broadcasts = 6

Why?

3. Rank your preferred method of communicating with fellow students in your study program giving 1 for the most preferred method, 2 for next and so on.

	Rank
a. Phone (SMS or telephone call)	
b. Email	
c. Social networking sites (Facebook, Twitter, Yahoo or Google Groups)	
d. Moodle discussion forums	
e. Meeting them face to face	
f. Other: please specify	

4. Have you ever contacted your course administrators using ICT?

Yes = 1

No = 2

If "yes" how did you contact them?

5. Have you ever contacted your course lecturer using ICT?

Yes = 1

No = 2

If "yes" how did you contact him/her?

6. If you have a problem relating to course material, how do you clarify them? Rank the following according to your choice, 1 for the most preferred 2 for next and so on. If you would not consider a listed method please leave them blank.

	Rank
a. Talk to friends	
b. Ask the lecturer	
c. Post a question on a discussion forum	
d. Try to find the answer by myself	
e. Ignore it	
f. Other: please specify	

7. How often do you contribute to online discussions relating to your course?
- Almost all discussions = 1
- Several discussions = 2
- Once or twice (rarely) = 3
- Never = 4
- I am not aware of online discussions relating to my course = 5
- My course does not use online discussion = 6

Section 4 – Opportunities for using ICT

1. The following are some statements about access to computers and the Internet. Please rate each statement based on how agreeable it is for you using the following scale.
- Very Strongly Agree = 1
- Strongly Agree = 2
- Agree = 3
- Disagree = 4
- Strongly Disagree = 5
- Very Strongly Disagree = 6

	Very strongly agree	Strongly agree	Agree	Disagree	Strongly disagreed	Very strongest disagree
a. Considering an average Sri Lankan's income, buying and maintaining a computer at home is quite expensive	1	2	3	4	5	6
b. Considering an average Sri Lankan's income, having Internet access to a home computer is also expensive	1	2	3	4	5	6
c. I do not think it is essential to have access to a computer for learning purposes	1	2	3	4	5	6
d. I do not think it is essential to have access to Internet for learning purposes	1	2	3	4	5	6
e. I would spend time learning on computers and the Internet because I think it is important	1	2	3	4	5	6

2. I use the Computer
- | | | | |
|----------------------|-----|--------------------------------|-----|
| Every day | = 1 | Less than once a week | = 4 |
| Several times a week | = 2 | Never | = 5 |
| Once a week | = 3 | I don't want to use a computer | = 6 |
3. Do you have a computer at home?
- Yes = 1
- No = 2
- a. If "Yes", do you also have a printer?
- Yes = 1
- No = 2
- b. If you do not have a computer at home, is there a regional centre, a library or an Internet cafe where you can use a computer?
- Yes = 1
- No = 2
4. How often do you access the Internet?
- | | | | |
|----------------------|-----|------------------------------|-----|
| Every day | = 1 | Less than once a week | = 4 |
| Several times a week | = 2 | Never | = 5 |
| Once a week | = 3 | I don't want to use Internet | = 6 |
5. If you have access to the Internet, please state where you access the Internet (tick as many as applicable)
- | | | | |
|-------------------------|-----|--------------------------------|-----|
| At home | = 1 | Library or Public access point | = 4 |
| At work | = 2 | Educational institute | = 5 |
| Friend/relative's place | = 3 | Internet Cafe | = 6 |
6. If you have internet access at home what is the connection type?
- | | | | |
|----------------------------------|-----|--------------------------------|-----|
| Dial up (using landline or CDMA) | = 1 | GPRS access using mobile phone | = 3 |
| BroadBand (ADSL, 3G) | = 2 | Other | = 4 |
7. Please indicate your ability to use the following programs to carry out the types of tasks shown.
- | | |
|-----------------------------|-----|
| Can do by myself | = 1 |
| Can do with some help | = 2 |
| Never done this before | = 3 |
| Not sure | = 4 |
| I don't think I can do this | = 5 |

	Can do by myself	Can do with some help	Never done this before	Not sure	I don't think I can do this
a. Creating folders and managing files	1	2	3	4	5
b. Using a word processor software to create a document	1	2	3	4	5
c. Sending an email with an attachment	1	2	3	4	5
d. Using a search engine to find degree programs offered by the National Online Distance Education Service	1	2	3	4	5

8. Have you encountered any difficulties using computers/Internet for your study programme?

Please add further comments/ suggestions:

Section 5 – Information about you

- I am :
Male = 1
Female = 2
- I am years old
- I am a:
Full time student = 1
Part time student = 2
- Are you registered for **any other degree program?**
Yes = 1
No = 2
- Are you in employment at the moment?

Yes = 1
No = 2

If "Yes" where are you working and what is your designation?
.....

6. How would you categorize your **English language** proficiency?

Excellent = 1
Good = 2
Average = 3
Poor = 4
Very Poor = 5

	Excellent	Good	Average	Poor	Very Poor
Reading	1	2	3	4	5
Listening	1	2	3	4	5
Writing	1	2	3	4	5
Speaking	1	2	3	4	5

7. I am :

Single = 1
Married = 2

8. What is the total monthly income of your family in Rs?

Less than 5,000 = 1	15,001 - 20,000 = 4	30,001 - 35,000 = 7
5,001 - 10,000 = 2	20,001 - 25,000 = 5	35,001 - 40,000 = 8
10,001 - 15,000 = 3	25,001 - 30,000 = 6	Above 40,001 = 9

9. Where do you live? (please specify the town/district)

10. What do you hope to do after completing this course? (select all that apply)

Find a job in Colombo = 1	Apply for migration = 4
Seek employment in other cities = 2	Seek opportunities for further education = 5
Seek employment abroad = 3	Other = 6

Appendix - 0 Sample Interview Transcript – English

Date: 01-02-2010

Venue: [REDACTED]

Interviewee: [REDACTED]

Designation: [REDACTED]

Q: Could you please explain to me how the courses you conduct with the use of ICT is developed and setup?

A: In the earlier course last year what I did was what was so called a supplementary course. My course I developed with a supplementary part and that was done using human resources available in the department. Basically demonstrators. Then this part is not that difficult to do. Demonstrator plus myself, I did a fair amount of work. Because under the DEMP project there are 3 templates developed. I used the template for a supplementary course. So it is not that difficult, it is straight forward. Once you get the template you just customize it, that is all. And it is supplementary means not compulsory. But this year I am offering the same course as a blended course. Again a template was provided, the developed template is there. However, this time I had to hire a person because there are advanced facilities that I didn't have time to go through and do. So she did fair amount of work like activities, putting MCQs, answers and so on. That is how the blended course was developed. And we are offering now only, starting today. [Phone ringing]

Right.

Q: You were telling me about the blended course you are offering.

A: Yes. Now it is going to be delivered, still we haven't. But the previous one we have delivered.

Q: So this one going to have compulsory things?

A: Yes, that is right. Even to sit the final exam students have to get minimum 35% marks in this part. That actually we introduced based on the experience we have from the last year. Because only very few people did this supplementary part. May be... It is supplementary so may be some people thought that they are not going to gain anything in terms of marks and so on. Only the really really interested few people did it. Because of that we thought there is no point in giving this things on supplementary level we should give some marks. Then only students are motivated to that. That is why this time it is fairly serious.

Q: When considering students who participate in your program how do they mostly utilize the provided facilities to engage in the learning process?

A: So far I have experienced only a supplementary course. In that basically we were giving student support. In the sense they could ask questions, then I clarify, and they themselves can clarify that is one of the facilities. And the other one was I gave e-assignments with a predetermined plan spaced out. With that what I try to achieve was that, now here experience have shown that the students study at the last moment. That means when there is an exam close by suddenly they realize 'Oh I have to study' and all that and then start studying and this course I am doing is "[REDACTED]", it has lot of new concepts and is fairly theoretical. So my point is that you can't do this type of courses like that. This is not a memory testing course, they cannot do it like that. So, I want to motivate them to study throughout the semester. So that is why I

gave these assignments nicely spaced, so that they have to cover a certain amount by that time. But it didn't work that way because very few tried, because it was supplementary. So this time this is a blended one, what I am going to do is now they are forced to answer questions, in the sense discussion forums I am planning to ask question per month and marks are given. Everybody has to participate in the discussion. Either they have to answer my question, not answer it is like a discussion. Make a contribution directly to my thing or some student query, like in a discussion. This time I am hoping to try that part out. And e-assignment only one or two at the end submitted. What I do is in the supplementary course also is I get all of them and had a workshop. About 76% came, although it wasn't compulsory I said workshop is compulsory so 76% came out of about 25 students. And they were really excited with this discussion facility and eLearning. But once they go home slowly that interest disappears. First e-assignment almost all of them who participated submitted. Large percentage that was. And slowly I saw second, third one and when we went to assignment seventh only one or two. So somehow this thing is there. Motivation is necessary by giving marks or making it compulsory or so. My experience apart from this eLearning thing is Distance Education in Sri Lanka, if you keep the whole thing open that is OK, this is also optional, that is also optional, this is also optional it is working against the student. Most of the time they take the easiest path, the least. But by doing that they don't know that they have failed, because ultimately what they see is at the end of the semester once they sit the exam – failed. Now what to do? As educators I think in the correct path we have to push them.

Q: Set specific mile stones to achieve perhaps?

A: Yes, mile stones also you might say these are open and distance students so we should not have too many mile stones and all that, it is working against. The argument is that for other ones it is like continuous. Now you have distanized here here and here. Now the problem is earlier we had one or two [assignments]. My point is that it is not enough. Because what happens is the continuous is the best to me. But that is also working against the principle you know? So at least make it a little bit more ... more.. link towards a continuum. Otherwise this distanization doesn't work because then they wait wait wait wait and two days before the exam suddenly they start doing it. Now the conventional setting they have to go to the lecture almost every day and they learn something. So let us see how this can be broken without really breaking the concept totally. Because part of the concept it never said it should not engage continuously in education. What is necessary to me is the location and the mode. That part we give oh and the time, exact time. Doesn't matter if you can participate in the night. When we are sleeping but somehow some kind of time distribution has to be there. So I think this is the ideal medium so let us do.

Q: How well do you think they are prepared for this type of program I mean the ICT enabled programs with respect to skills, motivation and resources?

A: With respect to skills, what I found was now I have been doing this also I said last year also I offered a course, I have done this using "Manhattan" long time ago virtual class, now I have experience about 6-7 years. Now things are improved. That means right at the beginning most of the people did not know how to use a computer to do these things. But last year there was a remarkable improvement and about I think about may be 40% had computers at their home, although they didn't use it, which is a different story. But this time also I am collecting the data. Every year I collect data how many are having computers at home and so on. So things are improving. That is with respect to resources. There when I do the workshop also I see, long time ago they did not know how to setup an email account. But last time only out of 25 only one or

two people didn't know how to do it. Their literacy and that part is improving so there is no problem. What was the other thing?

Q: What about the connection, I mean the internet connection?

A: Internet connection, OK. Some I cannot give you the exact numbers had internet at home. And I know one person she took internet connection because of this course. She persuaded her family to get an internet connection. So that is also improving. And these things does not need that type of a speed because there is no interactive material. So whatever they can get with 3G is sufficient. If they don't have that they are supposed to come to our NAC centres or our [REDACTED] centres. And we have as you know Matara, Kandy, Anuradhapura and Colombo and Jaffna also. And now we have NAC centres also they have free access to NAC. Anyway this time the course is running on NAC and there won't be any problems. May be some will not have at home but they will have some way of access. What is the other one?

Q: Other one is Motivation.

A: That is why we are motivating them by making it compulsory. Because that was one of the lessons we learned, if you don't motivate them sufficiently I think they take the least resistance path, which is bad for themselves. They don't realize it until at the last moment. So this time they have to get motivated, otherwise they will not get to write the final exam. So we will see how it goes.

Q: With your experience practicing online teaching for many years, have you observed any particular characteristics of students who take part in this type of blended online activities as opposed to others?

A: Now, partly it is the adventurous people I think went first. Because this is new and it was kind of non compulsory so definitely only the adventurous people will do, so I observed that. And the good ones, the ones who got "A"s they tried it. In a sense they were the motivated ones to do this and the adventurous ones. The others, the average ones no they didn't take part.

Q: For example, have you observed in a particular area the students are better off with using computers for this type of courses?

A: Area means geographical area?

Q: Yes

A: I have no idea. But I know that the one person there from Matara. She was logging in even 10 in the night. These students are basically Colombo based I think. Because I asked once "why don't you use this facility?" I asked once from everybody. Then they came up with a good answer. They said "Ok you are giving answers to questions and most of us live around here so we can come and talk to you rather than writing this complicated equations through this machine why don't I come and talk to you". It is also a reasonable answer I thought. Because most of them, even though they are from rural areas they lived close by.

Q: May be they are engaged in employment?

A: Not employed. There were employed people, they were also living here. But serious students they also thought they should come and live close by for some reason. So they were in boarding places or so. They were rather happier to come and talk to me than communicating through this medium. [...] The fact remains that they appeared like urban as they are close by.

Q: Were there specific difficulties reported by students regarding accessing the system or working with it etc.?

A: I think one thing I .. one question I asked "how competent are you". To run this supplementary class here and once before that Manhattan system, they should know Word with

equation editor. Because this one has equations. So they cannot write and communicate. But the simple Moodle does not provide all that. So they had to go to word and do it. So there were two difficulties. When in the workshop when I asked them "how competent are you in Internet" one question on Word. Lot of them said reasonably good. But then in real practice they were rather reluctant to use, they were uncomfortable. Though they say they are comfortable I think they are uncomfortable. But the thing is improving. That is my feeling. I don't have hard and fast numbers on this but things are improving. That is also reflected in their answer to me, "why should I write all those complicated equations when I can come and ask you since I am close by". If you are really a computer literate person and having a computer at home this distance you don't have to come. You log in and write it. They are not up to that level, most of them.

Q: What about the language?

A: Yes that may have been another problem. Language may have been but I am talking about level 5, [redacted] level 5 [final year]. So they are, you know the system right? First year all three languages, there after only English including exams. So they may have been uncomfortable with the language. But at the workshop the discussions they had a they participated I see real enthusiasm. They use broken English but I also encourage. You don't have to have perfect English. As long as you can communicate it is good enough for me. So forget about English and go ahead. And they participated. But somehow that type of participation did not materialize in the real world. So may be partly English, but it is not the whole thing. English if you put all the blame on English I think it is wrong, may be English is a part.

Q: I was wondering, when we speak even though we make mistakes it is not written down.

A: I cannot say yes or no whether that is affecting them. But my gut feeling is that is not the total problem. Now this time, after this time they will be able to, because this time they are forced to do it. They have to do it. This time we can see whether they are really uncomfortable with that or what. But coupled to that it is not only English. In our culture people expressing their ideas is less. When you post it is there in big letters, said by this person. That may have been there. It is not specifically English. That is what I am saying. Even if I run it in Sinhala my guess is that, that factor will be there. Very rarely somebody asks questions even in a day school. In day schools I say if you don't know English ask in Sinhala and there were one or two nasty guys in my class. At the workshop they were making fun of it. But I promptly discouraged them. I reminded them how you start walking and you don't start walking immediately no, one day you get up and walk? That thing I keep on saying. But those things are there. I think what you said is quite right, quite right.

Q: I think you have answered my next question too. What are the difficulties that you have observed that the students are facing? You said that even though they say they are competent in Computer use they do have a problem with level of computer skills.

A: Definitely that is there. When it comes to equations, I found that even though they say competent, no they were not that competent. So they are uncomfortable. So I get that there is a barrier. It is not freely coming. Compensating that effort we have to give them something, marks or something. So that is why we are experimenting blended. That is one thing and the other one may be cultural difficulty. Then internet difficulty is also there. And something else is also there. Even the good ones I remember but that is not with this Moodle. There was a first class, she had a computer at home. And she told me one day that she never uses it to participate in these. So I ask why why. I think her problem was she was taking too many courses and everything so she took the minimum effort to pass. That was a strategic kind of thing. So the blended one, once

you offer it in blended mode you cannot really gauge why it is so, because this factor is also there. If you don't give them something why should I? Unless you are a really motivated person who is learning for the sake of learning. Those type of people participate, last year also. But even though she got a first class, she was a type of a strategic person. [laughing]

Q: I would like to ask you now, what sort of measures would provide them a better experience?

A: One is we have to motivate them, so make it compulsory. People may say it is forcing but I strongly believe if you give total freedom it is not going to work and nothing will happen. It is true in other spheres of life also. [...] So this time that measure has been taken. Then also we have to make it interesting. They should feel that they are getting something. So this time still it is under experiment we are giving these activities so they can do MCQ type thing where they get the response also. So that is also provided and the discussion is also compulsory. Once it is done only we can say whether it is OK or not. And the other measures are already there, infrastructure is there through the DEMP project. So they cannot complain, NAC centres are so many, so they always should be able to find a NAC centre. Those are the pretty much problems and solutions provided.

Q: What do you think the recognition would be for total online courses? For example, if you offer this course totally online.

A: Recognition by?

Q: By the society, employers

A: I cannot give you a direct answer. But you must realize that even distance education until recently people say that it is not as good as face to face. So that barrier still we are fighting with in [redacted]. And now we have produced graduates who are good, they are independent learners, ideal for higher degrees. So I know our best students are sorted by the University of Colombo for their higher degrees, University of Jayawardenapura I know they are taken for higher degrees. Slowly we are getting that recognition. I am talking about science. Still I have heard even you can train doctors using distance education. Even nursing people have questions, such practical things can you do. I am a distance educator and I strongly believe that this can be done and it may be even better if you do it right with their participation. To me the biggest problem is that you don't get the student engaged. Because the moment you get rid of the time factor OK here are your mile stones, the guy does not do anything, or he does something and halfway. But in other universities they are supposed to go everyday and I mean you are on that train. Here there is switching you do other things and suddenly you switch. That takes time and no good. For learning you have to sit down, be in that mood. That is not there. But this provides the answer to me, the online part. Because now you have a mechanism to get them involved continuously. But you have to implement it properly so that you break it into small chunks in time. So the time ordering has to be there otherwise if you go back to old way, here is the thing you do whatever you want it is not going to work. So recognition of distance education itself has to be thought. I don't know about the world situation, I think they are also little bit uncomfortable. Prof. [redacted] knows about it ask her. But online it is a totally new thing to Sri Lanka. But we also have this I think it is a bad behaviour. If you say this is done in the USA or UK we say "yes yes it is good" and we accept it whether it is right or wrong. That is also there. Around the globe I guess this is becoming more and more popular and even our business community has taken it seriously not to sell but for continuous professional development. And they accept it. So I believe this is an excellent medium, you can overcome some other difficulties in distance mode by properly using it, and this can lead interactive environment even though it is

expensive. Of course you have to invest a fair amount. Even to prepare the course lot of money required and lot of resources needed. But once you have that I personally believe it is a good one. But acceptance we will have to wait a little and see how it is accepted by the other parties. But certainly it has the elicit that flavour is there.

Q: Is there anything else that you think you would like to tell me about the topics we discussed?

A: I think I said pretty much all. My experience is that this time ordering from the beginning even for the books it is needed. Examinations we are going to try one. But I said it all I think.

Appendix - P Sample Interview Transcript – Sinhala

Date: 04/09/2010

Interviewee: [REDACTED]

27 years, male working [REDACTED] from [REDACTED] (Kalutara).

- ප්‍ර: ලංකාවේ යුනිවර්සිටි වලින් දැන් අළුතෙන් ඩිප්ටන්ස් ලූර්නිං කෝසස් පවත් ගෙන තියනවා ඒ ගොල්ලො ICT ගොඩක් යුස් කරලා තමයි ඩිජිටල් කරන්නේ. උදාහරණයක් විධියට කිව්වොත් ඔන්ලයින් කෝසස් ඒ වගේ පවත් ගෙන තියනවා. ඔයාට තිබෙන විධියට මේකට හේතුව මොකක්ද?
- පි: ඩිප්ටන්ස් ලූර්නිං නිසා අපට හැකිවෙලා තියෙනවා වෙනත් වැඩක් කරන ගමන්ම ඉගෙනගන්න එක කරගෙන යන්න. එක්සාම්පල් එකක් විධියට දැන් මම වර්ක් කරනවා. මම සොල්ට් වෙයාර් කම්පැනි එකක වර්ක් කරන ගමන් මගේ ඩිග්ටල් එක කම්ප්ලීට් කරනවා. ඒක ලොකු ඇඩ්වාන්ටේජ එකක්. අනෙක් කන්වෙන්ෂනල් යුනිවර්සිටි ගත්තොත් ඒ අවුරුදු ගණනම අපි ඒකට ඇටෙන්ඩ් වෙන්න ඕන. ලෙක්චර්ස් වලට ලේස් වූ ලේස් යන්න ඕන. එහෙම නොවුනොත් අපට කවර් කරගන්න බැරවෙනවා. අපිට [REDACTED] වගේ කලොත් ගොඩක් හැකිවෙලා තියෙනවා අපිට Moodle එකට ලොග් වෙලා Moodle එකෙන් අපට ලෙක්චර්ස් අරගෙන නැත්නම් ඇඩ්ෂනල් රිසිංස් අරගෙන ගොඩක් සෙල්ෆ් ලූර්නිං පැත්තට වැඩියි. ඉතිං ඒකෙන් අපට ගොඩක් ප්‍රයෝජනවත් කියලා හිතනවා.
- ප්‍ර: එකකොට දැන් ලහදිම කරා වෙන දෙයක් තමයි ICT භාවිතා කරලා වියදම් අඩු කිරීම වගේ දේවල් ගැන. ඒ ගැන ඔයා මොකද හිතන්නේ?
- පි: ඇත්තටම මමත් හිතනවා මමත් ඒකට එකඟ වෙනවා. ඒ කියන්නේ ICT ඉන්ෆොමේෂන් ටෙක්නොලොජී කියන එක නිසා ගොඩක්ම අර ලෙක්චර්ස් වල ගත්තොත් ඔ ඒක, එකකොට අපට ප්ලේස් එකක් එහෙම අවශ්‍යයිනේ ඇත්තටම, ක්ලාස් රූමිස් ඇලොකේට් කරන්න ඕන අපි. නමුත් IT වලින් අපට ඒ ඔක්කොම වර්ඩුවල් ක්ලාස් රූමි එකක් වගේ කරලා කරන්න පුළුවන් නිසා මම හිතනවා ඇත්තටම අපට ගොඩක් බෙහිවිටි එකක්. ඒ වගේම එයාලගෙ ගොඩක් කොස්ට්ස් අඩු කරගන්න පුළුවන් කියලා මම එකඟ වෙනවා.
- ප්‍ර: දැන් ලංකාවේ ඔන්ලයින් ඩිග්ටල් ඔෆර් කරන එකෙන් බලාපොරොත්තු වන තව දෙයක් තියනවා. ඒ අය බලාපොරොත්තු වෙනවා ගොඩක් දෙනෙක්ම යුනිවර්සිටි ඩිග්ටයස් ගන්න අවස්ථාව ලබා දෙන්න. [...] ඔයා හිතන විධියට ඒ ඕනම කෙනෙක්ම මේ වගේ කෝස් එහෙකට සහභාගී වෙන්න පුළුවන්ද? ඒ කොහොමද?
- පි: දැන් ලංකාවේ තියන තත්වය අනුව ඒ දවස්වල නම්..... ගොඩක් මැකකදි නම් ඒ දේ ඇත්ත වෙනවා. ගොඩක් තේරීවර්ක් ප්‍රොවයිඩර්ස්ලා ඩයලොග්, ටෙලිකොම් කම්පිට්ස් ඉන්ටනෙට් හැම තැනටම ලබා දීලා තියන නිසා ඒ ෆැසිලිටිස් තියන නිසා දුර ඉන්න මනුස්සයකුට වුණත් දැන් අපි ගත්තොත් ජැග්නා ඒ වගේම අනුරාධපුරේ වගේ ගොඩක් දුර බැහැර ඉන්න කෙනෙකුට වුණත් මේ මෙතඩ් එක තරු ඉගෙන ගන්න පුළුවන් කියලා මම ඇගේරි වෙනවා. නමුත් කලිං නම් පුළුවන් කමක් තිබුනේ නෑ. මොකද හැම තැනම ඉන්ටනෙට් තිබුනේ නෑති නිසා. හැමෝටම ලොග් වෙන්න අමාරුයි. එකකොට ඩිප්ටන්ස් ලූර්නිං කියන මෙතඩ් එක විකක් ලංකාවේ ගත්තොත් විකක් අමාරු තත්ත්වයක් තිබුණේ. නමුත් දැන්නම් ඒක මග ඇරිගෙන යනවා හැම තැනටම ඉන්ටනෙට් තියන නිසා. ඩොංගල්ස් වගේ දේවල් වලින් කම්පිට්ස්ට පුළුවන් ඉන්ටනෙට් ලොග් වෙන්න. ලොකු කොස්ට් එකක් යන්නෙන් නෑ ඉන්ටනෙට් ලොග් වෙන්න. ඒ දවස්වල වගේ. ඉස්සර නම් මට මතකයි ඒක කරන්න බැහැ.
- ප්‍ර: ඔයා ඇයි කෝස් එක තෝර ගත්තේ?
- පි: එකක් මට ආල්ටර් A/L s මම I IT එකේ කෝස් එක කලාට පස්සෙ. මට ඒ දවස්වල තිබුණේ නෑ මම කෝස් එක කලේ 2002/ 2003 වගේ. ඒකයි මම ඩිප්ලෝමා එක කලේ. ඒ කාලෙ තිබුණේ නෑ ගොඩක් ප්‍රයිවේට් ඩිග්ටල් ඔෆර් කරලා හරි අඩුයි නේ. මම තිබුවේ ඩිප්ලෝමා එකක් තියනම් මෝදෑන් ඉනල් කියලා. ඒ නිසා මට පොඩ්ඩක් මග ඇරුණ ඩිග්ටල් එක කම්ප්ලීට් කරන එක. නමුත් මම දැන් වර්ක් කරන නිසා මට ජොබ් එක අතඅරින්නත් බැහැ අනික කම්පයාර් කරද්දිවත් කරන ගමන් ඩිග්ටයස් කරන්න හරිම අමාරුයි. මොකද ප්‍රයිවේට් ගියත් අපි ICBT වගේ තියනවා ඒත් අපට ලොකු ගණනක් ගෙවන්න වෙනවා. නමුත් [REDACTED] එකේ බජට් එකක් ගොඩක් හොඳ නිසා ඇත්තෙන්ම අපට වර්ක් කරන ගමන් වැඩ කරන්න පුළුවන් නිසා කැමති වෙලා මෙතනට ඇවිත් සොල්ට් වෙයාර් ඉංජිනියරිං කියන ඩිග්ටල් එක මම දැන් කරන ගමන් ඉන්නේ.

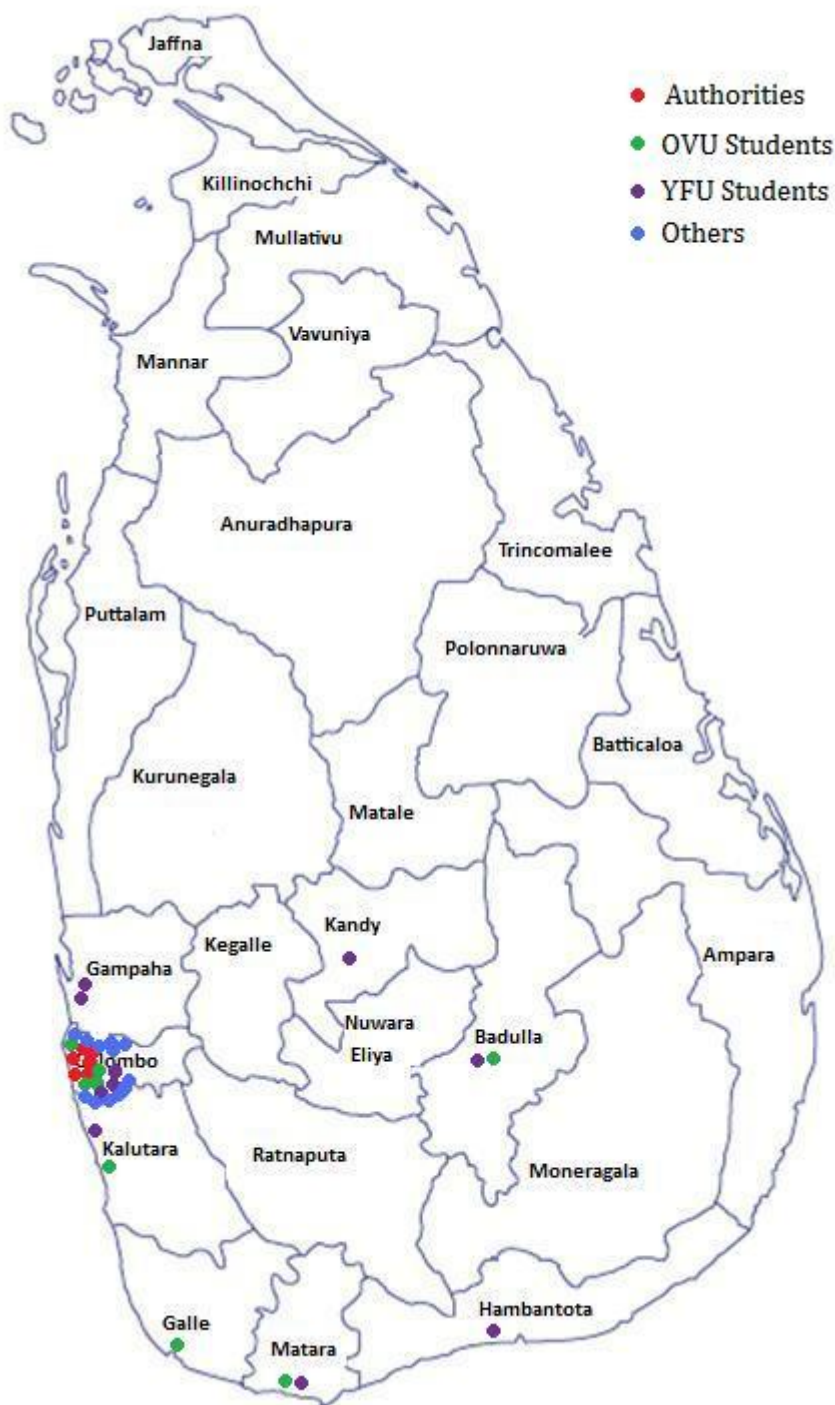
- ප්‍ර: එතකොට මේක ඔන්ලයින් කෝස් එකක් විධියටයි යන්නේ. මේක එහෙම නොවුණා නම් ඔයා ඒත් මේක කරනවාද?
- පි: ඒක ඇත්තටම කරනවා කියලා මම ඉන්නවා. නමුත් මට එක් ඩේස් වල තිබුණා නම් කෙරෙන්නේ නෑ. මොකද මට දැන් ජොබ් එක අතඅරින්න බැරි තත්ත්වයක් තියෙන්නේ. සවයිට් වෙන්න ඕනනේ. අපි දැන් සිනියර් ලෙවල් එකක ඉන්න නිසා අතඅරින්න පුළුවන් කමකුත් නෑ. [...] එක් එක් ඩේස් වල තිබුණා නම් කරනවා අනිවාර්යයෙන්ම. ඩිස්ටන්ස් ලර්නිං තිබුණත් නැතත්. ඩිස්ටන්ස් ලර්නිං තියන නිසා ගොඩක් ලොකු බෙනිෆිට්ස් අපට තියනවා. Moodle එකට ලොග් වෙලා බලන්න පුළුවන් නිසා.
- ප්‍ර: දැන් මේ වගේ ඔන්ලයින් කෝසස් පටන් ගත්තහම වාන්සස් ලැබෙනවා ඔන්ලයින්ම අසයින්නේම එස් සබ්මිට් කරන්න. එතකොට ඩිජිටල් කොපි එකක් තමයි අසයින්නේම එකේ සබ්මිට් කරන්නේ. දැන් මේ විදියට අසයින්නේම එස් සබ්මිට් කරන්න වෙන රටවල් වලත් පාවිච්චි කරලා තියනවා. එතකොට දැනගන්න ලැබ්ව්ව දෙයක් තමයි ගොඩක් ප්ලේස්ට් සම් තියනවා කියලා. ගොඩක් අය ඉන්ටනෙට් එකෙන් කොපි කරලා ජෙස්ට් කරලා දෙනවා කියලා. මේ වගේ දේවල් කොපි වගේ බලපෑමක් කරයිද කෝස් එකේ කොලිටි එකට?
- පි: ඒක ඉගෙනෙන්න වෙනවා කියලා කියන්න අමාරුයි. මෙහෙම දෙයක් තියනවා. අපි හිතමු අපි තොරතුරු ගන්නයි කියලා ඉන්ටනෙට් එකෙන්.
- ප්‍ර: ඔව්.
- පි: ඒක කොපි කරලා ජෙස්ට් කරනවා හා සමානවම මම කියන්නේ මගේ අයිඩියා එක. අපිට ඒකම මැනුවලි හාඩ් කොපියක් විධියටත් ලියන්න පුළුවන්. එහෙම බැළුවොත් ඒකෙ ඩිටරන්ස් එකක් නෑ. ඔන්ලයින් සබ්මිට් කරන ඩිජිටල් කොපියම හා සමානව සබ්මිට් කරන්න පුළුවන්. ඒක නිසා දැන් ඔන්ලයින් අසයින්නේම එක සබ්මිට් කරන්න ලැබෙන එක ලොකු ෆීඩ් එකක් කියලා. අද්ට් වයිස් අපිට අනිවාර්යයෙන්ම යන්න වෙනවා සබ්මිට් කරන්න ඕන ඩේට් එකට. ඉතිං ඒක වර්කිං ඩේ එකක් නම් අපි ඔබ්ස් එකේ ලිව් එකක් හරි ෂොට් ලිව් එකක් හරි දාලා එන්නම වෙනවා. අසයින්නේම එක දෙන්න. මොකද ඩියු ඩේට් එකට දෙන්න එපැයි. ඒක ලොකු ඩිස්ඇඩ්වාන්ටේජ් එකක්. නමුත් අපට ඔන්ලයින් සබ්මිට් කරන්න ලැබෙනවා නම් ඒක ලොකු දෙයක් කියලා මම හිතනවා.
- ප්‍ර: ඔයාට ඉන්ටනෙට් ඇක්සස් කොහොමද? ඒකට යන්න කොයි වගේ වියදමක්ද?
- පි: මම පාවිච්චි කරන්නේ ඩයලොග් එකේ තියන ඩොංගල් එක. ඒක මම ගත්තේ ලංකාවේ තියනවා 'ඩයලොග් ස්ටුඩන්ට් පැකේජ්' කියලා එකක්. ඒකට මම රු: 2000/- විතර ජේ කරනවා. මන්ත්ලි. නමුත් එයාලගෙ ගණන විකක් ලොකු වැඩියි. වෙනම ගන්නවා නම්. අපි ස්ටුඩන්ට්ලා විදියට රෙජිස්ටර් වෙච්ච නිසා ඒක ඒගොල්ලො 2000/- වලට දෙනවා. [...]
- ප්‍ර: ඔයා ඒකෙ කොලිටි එක ගැන මොකද හිතන්නේ? කනෙක්ෂන් කොලිටි එක ගැන? ඒ කියන්නේ ඩිවුන්ලෝඩ් ස්පීඩ් එක වගේ?
- පි: ඒක නම් එච්චර කැමති නෑ. මොකද ඒකෙ ස්පීඩ් එක ADSL එක්ක තමපෙයාර් කරද්දි නම් ගොඩක්ම අඩුයි. නමුත් අවශ්‍යතාවය නිසා, මට ADSL ගන්න... මම ඉන්න මෙතන [REDACTED] ටවුමේ ඉඳලා 9Km විතර ඇතුළට. ඒ හරියට ADSL ෆැසිලිටි නැති නිසා තමයි මට මේකට යන්න වුණේ. මොකද මට ඔප්පන් 2යි නේ තියෙන්නේ. එක්කො ADSL ගන්න ඕන නැත්නම් වෙන කනෙක්ෂන් එකකට යන්න ඕන. මම කැමතියි ADSL වලට. නමුත් ගන්න විධියක් නැත්තේ ටෙලිකොම් එක ප්‍රවයිඩ් කරන්නේ නෑ මෙතනට ADSL. එයාලා කවර් කරන්නේ පොඩ් ඒරියා එකක්. ඒක නිසා අපට තාමත් ADSL නෑ. ඒ නිසා මට යන්න වුණා ඩයලොග් පැකේජ් එකට.
- ප්‍ර: ඉංග්ලිෂ් නොලේස් එක අවශ්‍ය කරනවා ඉන්ටනෙට් එකක් එක්ක වැඩ කරන කොට මොකද සිංහලෙන් දෙමළෙන් තියන කන්ටෙන්ට් ගොඩක් අඩුයි. ඔන්ලයින් කෝස් එකක් කරන කෙනෙක් විදියට ඔයාට හිතෙන විදියට ඉංග්‍රීසි වල අවශ්‍යතාව කොහොමද?
- පි: ඇත්තටම මමත් මේකට ඇගේරි වෙනවා. මොකද ඉංග්‍රීසි නැතුව නම් කරන්න හරි අමාරුයි. ඒ වුණත් මම කරන කෝස් එක සොෆ්ට් වෙයාර් ඉංජිනියරිං ගත්තත් සිංහලෙන් පොත් පත් අඩුයි. ඉන්ටනෙට් එකේ ගත්තත් සිංහලෙන් රිසෝසස් අඩුයි. අනිවාර්යයෙන් ඉංග්ලිෂ් නොලේස් එක ගොඩක් තියෙන්න ඕන පොත් රිඩ් කරලා තේරුම් ගන්න. අනිවාර්යයෙන්ම ඉංග්ලිෂ් නොලේස් එක තියෙන්නම ඕන.
- ප්‍ර: මේ කෝස් එක ඔන්ලයින් කෝස් එකක් විදියට හාවිතා කරනකොට ICT නිසා ඔයාට හරි ඔයාගෙ යාළුවොන්ට හරි වෙච්ච අපහසුතා තියද?

- පි: ඇත්තටම සමහර වෙලාවට අපට Moodle එකට එහෙම ලොග් වෙන්න බැරි ප්‍රශ්න තියෙනවා. තිටපු ගමන් අපි වැඩ කරගෙන ඉන්නකොට ඩිවෙල්ප් ඔක්කොම තියෙනවා Moodle එකේ. ඒ වගේ වෙලාවල් වල කනෙක්ෂන් ඩිස්ටර්බන්ස් එනවා. Moodle එකට ලොග් වෙන්න එහෙම බැරි. ඒ වගේ එක්ස්පිරියන්ස් එකක් තමයි මට තියෙන්නෙ.
- ප්‍ර: ඔයා කියපු විදියට ඔයාලගෙ කෝස් රිසෝසස් ඔක්කොම වගේ තියෙන්නෙ Moodle එකේ, අප්ලෝඩ් කරලා. එතකොට ඔයා පාවිච්චි කරන වෙලාවට සොල්ට් කොපි පාවිච්චි කරලද කරන්නෙ ප්‍රින්ට් අවුට්ස් ගන්නවද කොහොමද ඒක කරන්නෙ?
- පි: ඇත්තටම මම ටිකක් සොල්ට් කොපි යුස් කරනවා ටිකක් අඩුයි. මං පර්වස් කරලා බ්‍රක්ස් පාවිච්චි කරනවා. ඊට අමතරව මට යුනිවර්සිටි එකෙන්ම ලැබෙනවානෙ බ්‍රක්ස් වගයක් ඒවා යුස් කරනවා. හැබැයි මම අසයින්නේ ඒකක් කරන ගොඩක් වෙලාවට මම ගොඩක්ම ඉන්නෙ ඒක පාවිච්චි කරනවා.
- ප්‍ර: එතකොට ඔයා අප්ලෝඩ් කරලා තියන ඩොකියුමන්ට්ස් වල ප්‍රින්ට් අවුට්ස් අරගෙනද පාවිච්චි කරන්නෙ?
- පි: සමහරක් වෙලාවට එහෙම කරනවා. රෙකර්ඩ්ස් බ්‍රක්ස් තියනවානෙ සොල්ට් වෙයාර් ඉංජිනියර්. ගත්තොත් ඒ වගේම මම බ්‍රක්ස් පර්වස් කරලා තියනවා වෙනමම. සොල්ට් කොපි ටිකක් අමාරුයි. අපට ඕන ඕන විධියට කියවන්න. නමුත් ලේසියක් තියනවා කොස්ට් එක පැත්තෙන් නම් එහෙම කරන්න පුළුවන් නම්. නමුත් අර අපට අමාරුයි එහෙම කරන්න.
- ප්‍ර: මේ ප්‍රෝග්‍රැම් එකක් එක්ක සම්බන්ධ වෙනකොට ඔයා මට මුලින් කිව්වා Moodle එකට සම්බන්ධ වෙනවා කියලා. එතකොට ICT භාවිතා වෙනවා. ඒ ඇරුණම වෙනත් ICT භාවිතා කරන අවස්ථා තියනවද? [...] වෙනත් අවස්ථා මොනවද ඔයා මේ ප්‍රෝග්‍රැම් එක සම්බන්ධයෙන් ICT භාවිතා කරන?
- පි: මම නම් අක්කේ ෆෝරම්ස් වගේ ඒවට ලෙක්චර්ස් ලගෙන් ප්‍රශ්න වගේ අහන්න යොදා ගන්නවා. උදාහරණයක් විධියට ඩේටා ස්ට්‍රක්චර්ස් වල ලෙසන් එකකදි මට ආපු ප්‍රශ්න තමයි කවුන්ටර් එන්සාම්පල් වලින් ඔප්පු කරන්න බැරි එක. අපිට ඒ වගේ ඒවට ගොඩක් ෆෝරම් එක තියන නිසා ලේසියි. මම කරන්නෙ, මගේ ප්‍රශ්නය දැමීමහම [...] ලෙක්චර්ට අමතරව අනික් හැමෝටමත් ඒ මැසේජ් එක යනවනෙ. එතකොට ඒ පිළිබඳව කවුරුහරි එක්ස්පර්ට් කෙනෙක් ඉන්නවා නම් එයාලට කෙලින්ම ඒකට ආන්සර් කරන්න පුළුවන්. එයාලට මේල් එක එනවනේ. ඒකෙ ලොකු බෙතිරි එකක් තියනවා. සර්ට් අමතරව වෙන අයගෙ තියන දැනුමත් අපිට ලබා ගන්න පුළුවන් වෙනවා ෆෝරම් එක හරහා Moodle එකේ තියන. ඒක ලොකු බෙතිරි එකක්.
- ප්‍ර: ඒ ඇරුණම තවත් විධි වලට ඔයා තොරතුරු තාක්ෂණය යොදා ගන්නවාද?
- පි: මගේ යාළුවො ඔක්කොම “රි ටෝක්” එකේ ඇඩ් වෙලා ඉන්නවා. අපි දැන් සාමාන්‍යයෙන් ඔන්ලයින් කථා කරනවා. මැතමැට්ස් වගේ ප්‍රශ්න ආවම අපි පොඩ්ඩක් ඔන්ලයින් කථා කරලා “ස්කයිප්” වගේ හරි “රි ටෝක්” හරි පාවිච්චි කරලා අපි ඔන්ලයින් කථා කරනවා. ඒකට ලොකු කොස්ට් එකක් යන්නෙත් නැහැ ඒකට. ගොඩක් වෙලාවට එහෙම කරනවා.
- ප්‍ර: ගෙදරට ඉන්නෙ ඔක්කොම එකක් නැති කෙනෙකුට මේ වගේ කෝස් එකක් සඳහා සාර්ථකව සහභාගී වෙන්න පුළුවන්ද? [...]
- පි: මෙහෙමයි ඉතිං, ගෙදරට නැතිනම් ඉතිං ටිකක් හරි අමාරුයි ඉතිං. එහෙමයි මම හිතන්නෙ. මගේ අදහස නම් ගෙදරට ඉන්නෙ අනිවාර්යයෙන්ම තිබිය යුතුමයි කියන එක.
- ප්‍ර: ඒකට හේතු මට කියන්න පුළුවන්ද?
- පි: මෙහෙමයි රිසෝසස් ගොඩක්.... සෙල්ෆ් ස්ටඩි පැත්ත ගොඩක් වැඩියි ඩිසිටන්ස් ලර්නිං වල. මොකද ලෙක්චර් මිච්චි වෙන්නෙම නැති නිසා ගොඩක්ම ලෙක්චර් අඩුයි අපට. අපිටම තමයි ගොඩක් කරන්න තියෙන්නෙ. එක්කො කරන්න වෙන්නෙ බ්‍රක්ස් අරගෙන රිඩ් කරන්න ඕන. නැත්නම් අපි ඔන්ලයින් ගොඩක් තියන ඩිස්තර් හොයාගෙන තමයි රිඩ් කරන්න වෙන්නෙ. ඒක නිසා මම හිතනවා අනිවාර්යයෙන්ම තියෙන්න ඕන කියලා.
- ප්‍ර: දැන් අපි කථා කරගෙන ගිය මාතෘකාවට අදාලව ඔයාට කිවයුතු වෙනත් වැදගත් දෙයක් තියනවද?
- පි: මම හිතන්නෙ ඇත්තටම ගත්තොත් මේක සමර් එක විදියට ගත්තොත් මම ඇත්තටම කැමතියි. නමුත් එකේ ඩිස්ඇඩ්වෑන්ටේජස් නූත් තියනවා. ඒ කියන්නෙ ලෙක්චර් ෆේස් ටු ෆේස් හම්බ වෙන්නෙ නැති වුණම එක අතකට ඒක ඩිස්ඇඩ්වෑන්ටේජ් එකක්. මොකද සමහර වෙලාවට හිතන දෙය වචනයෙන් වගේ කියන්න අමාරුයි කියලා. අන්තිම අවුට්පුට් එක ගත්තොත් මම නම් හිතන්නෙ මේන් ඇඩ්වෑන්ටේජ් එකක් කියලා ඩිස්ටන්ස් ලර්නිං.

Appendix - Q Data Collection Summary

	Questionnaires	Interviews
Educational Authorities	No	Number of Interviews = 6 Ministry of Higher Education University Grants Commission National Educations Commission Distance Education Modernization Project
Orange Valley University	Usable – 33 (Printed – 30, Email – 3) Printed questionnaires were distributed at the CDL for the first cohort of students enrolled in the degree program.	14 interviews and 1 group interview Interviewees: Number of individuals – 14 Students – 8 Tutors – 2 Others – 4 (CDL Authorities, Administrators, Module Coordinators, Librarian) (Includes more than one interview with same person)
Yellow Fields University	Usable – 96 (Printed – 90, Email – 6) Printed questionnaires were distributed at two different locations on four different days.	13 interviews and 1 group interview Interviewees: Number of individuals – 16 Students – 10 Lecturers – 5 Other – 1 (Includes more than one interview with same person)
Total	129	Individual Interviews – 33 Group interviews – 2 Number of Individuals – 36

Appendix - R Interviewee Locations



Appendix - S NODES Access Centre Usage Statistics

NAC	Visits				Students				OVU				YFU			
	Aug	Sept	Oct	Nov	Aug	Sept	Oct	Nov	Aug	Sept	Oct	Nov	Aug	Sept	Oct	Nov
Ambalangoda	24	18	60	78	3	4	15	15	1				1	2	14	12
Ambalantota				1				1				1				
Ampara	72	158	277	139	21	32	35	25					1	2	4	5
Anuradhapura	6	11	11	15	1	1	1	7								6
Badulla	4	35	20	25	4	28	14	14								
Batticaloa	44	63	89	95	18	32	43	51					15	29	42	50
CNAC	303	492	580	158	153	238	252	112	1	1	1	1	150	237	248	110
CNAC 2	733	544	1067	360	308	162	323	199		1	1	1	306	159	317	195
DNAC	82	95	95	85	16	24	24	27	7	6	6	3	4	4	4	16
Galle	25	57	51	65	1	10	11	12	1	1	1			3	3	5
Gampaha	59	61	205	338	14	26	104	69	1	1	1		12	22	101	67
Kandy	395	361	476	455	139	154	163	234					129	140	152	220
Katunayake	16	28	30	110	6	10	16	51		1	1		5	7	13	21
Kegalle	21	67	87	86	5	10	14	12		1	1		2	3	4	5
Kurunegala	26	35	79	79	7	11	12	12	4	4	1	1	1	4	3	3
Matara	47	30	30	43	26	11	9	19			1		22	5	2	15
Monaragala	94	115	130	95	14	19	25	20						2	8	5
Peradeniya	114	8	89	69	20	29	14	33			1				5	
Ratnapura	107	222	235	219	30	26	29	26	1	1		1	1	2	6	1
OUC				3				2								1
Total	2172	2400	3611	2518	786	827	1104	941	16	17	15	8	649	621	926	737

Appendix - T Sri Lanka Statistical Abstracts

Computer Ownership Statistics

Sector/Province	Desktop (%)			Desktop or Laptop 2009
	2004	2006/07	2009	
Sri Lanka	3.8	8.2	10.6	11.4
Urban	10.5	17.8	23.6	26.3
Rural	3.1	6.9	9.2	9.8
Estate	0.3	1.1	3.1	3.3
Province				
Western	8.4	16.4	19.0	20.7
Central	3.3	6.7	9.7	10.4
Southern	2.2	4.9	6.6	7.2
Eastern	1.2	3.7	5.8	5.9
North-western	3.1	4.8	6.9	7.1
North-central	1.4	2.7	6.1	6.8
Uwa	0.4	2.7	4.6	4.9
Sabarabamuwa	2.0	3.3	7.3	7.5

Percentage of computer owned households by Sector and Province

Source: Department of Census and Statistics Sri Lanka (2009). "Computer Literacy Survey - 2009." from http://www.statistics.gov.lk/CLS/BuletinComputerLiteracy_2009.pdf.

Households with Electricity

Sector	Households with Electricity (%)
Sri Lanka	85.1
Urban	96.5
Rural	83.2
Estate	84.0

Source: Department of Census and Statistics Sri Lanka, Household Income and Expenditure Survey 2009/10 – Preliminary Report

Population Distribution

	Population	%
Sri Lanka*	16,929,689	100.00
Urban	2,467,301	14.57
Rural	13,547,710	80.03
Estate	914,678	5.40

* only 18 districts considered

	Urban		Rural		Estate	
	Population	%	Population	%	Population	%
Colombo	1,229,572	54.62	1,014,388	45.06	7314	0.32
Kalutara	113,188	10.62	915,477	85.86	37,574	3.52
Gampaha	300,933	14.58	1,762,028	85.38	723	0.04

Source: Department of Census and Statistics Sri Lanka – Census of Population & Housing

Monthly Household Income – 2009/10

Sector/ Province/ District	Mean (Rs.)	Median (Rs.)
Sri Lanka	36451	23746
Urban	47783	31000
Rural	35228	23126
Estate	24162	17366
Western Province	47118	30600
Colombo	51070	34186
Gampaha	48870	29821
Kalutara	35780	27511
Central	31895	21410
Kandy	33063	22450
Matale	30013	18606
Nuwara Eliya	31029	21431
Southern	32514	23253
Galle	31376	21886
Marara	30980	23048
Hambantota	36879	26406
Uva	28717	19761
Badulla	32313	20982
Moneragala	22161	17226

Source: Department of Census and Statistics Sri Lanka – Household Income and Expenditure Survey – 2009/10